IN THIS ISSUE: THE HELMET — PROTECTING THE HEAD, INTIMIDATING THE ENEMY, AND BOOSTING THE EGO

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ISSUE 102

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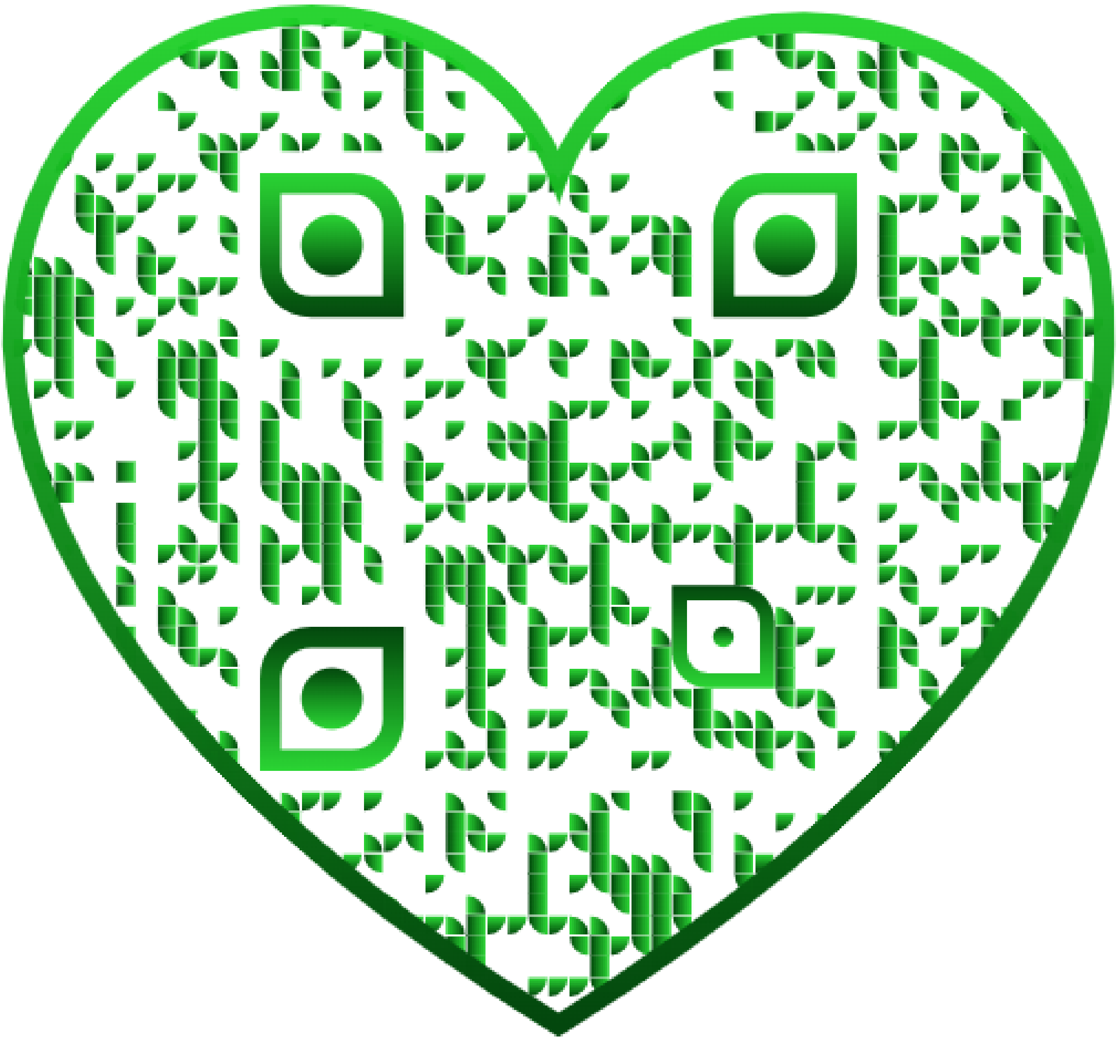
SPECIALS – HANNIBAL'S ALPINE TREK // JEWISH SOLDIERS ABROAD // THE RELIGIOUS SIDE OF PTSD



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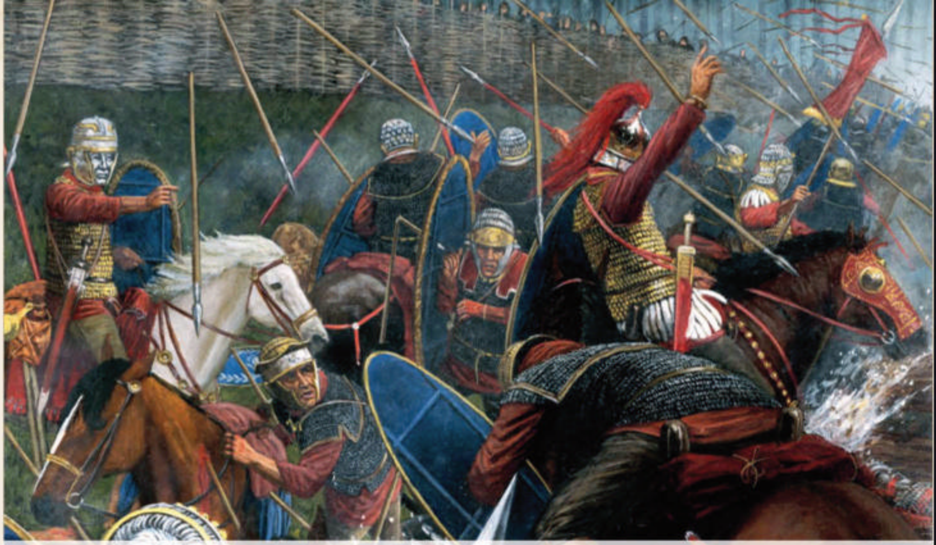

THEME: MADE TO SAVE YOUR SKULL

From the simple cap to the most intricately-wrought and elaborately-decorated royal example, the humble helmet could do much more than just protect its bearer's head.

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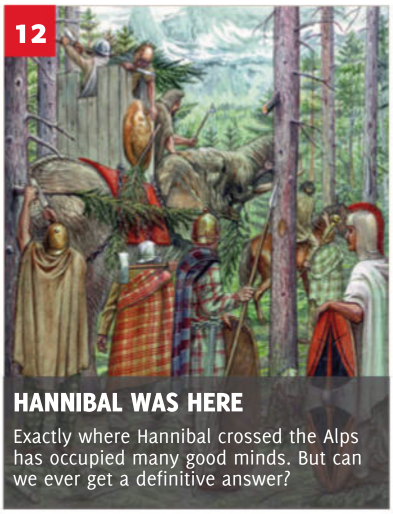

HANNIBAL WAS HERE
Exactly where Hannibal crossed the Alps has occupied many good minds. But can we ever get a definitive answer?

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BLING MY HELMET
Roman legionaries could buy their own helmets from the army and personalize it with easy-switch cheekpieces.

EDITORIAL — *Helmets*

If you are one of those people watching the apparent endless videos on Youtube discussing the infrastructure of the Netherlands, you'll know there are more bicycles than people here, and hardly anybody wears a biycle helmet. To be fair, that is changing, which is likely a good thing.

The reason I bring this up is that, you guessed it, I recently had an impactful experience that demonstrated why wearing a helmet while cycling can be a very good idea. Fortunately, the result was only a light concussion and the effects have worn off as I write this. But it is a damned odd coincidence that this situation presented itself just as we were working on a theme about helmets!

I'm obviously not going to suggest that the dangers of cars, other cyclists, and hard pavement are in any way comparable to the blows and projectiles flying around on an ancient battlefield. But the experience did cause me to reconsider the fragility of the human head. Yes, captain obvious, you might say. It stands to reason that the helmet is the primary defense for any soldier, and the most immediately obvious indication of his status. We'll see about testing their protective qualities another time, but there are many other aspects to examine already.

Jasper Oorthuys
Editor, *Ancient Warfare*

Roman bridgehead fort discovered in Austria

The first evidence of a Roman bridgehead fort on Austrian soil has been found by archaeologists. The discovery was made in the floodplains of Lower Austria, near the ancient Roman city of Carnuntum.

Researchers from the Austrian Archaeological Institute of the Austrian Academy of Sciences (ÖAW) and the Carnuntum Archaeological Park of the Department of Arts and Culture of the Province of Lower Austria identified remarkably well-preserved wall structures, some standing up to 2.65m high.

"The still visible walls at the site known as the Ödes Schloss ('Dry Castle') had al-

Mass grave reveals Roman battle in Vienna

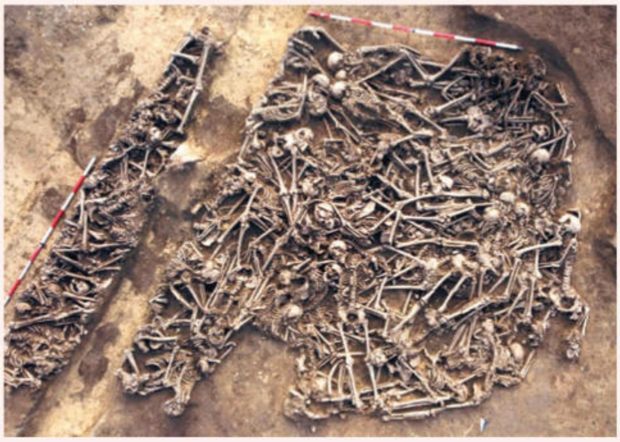
Archaeologists in Vienna, Austria have uncovered a Roman-era mass grave containing the remains of around 150 individuals who met violent deaths.

The individuals were buried without any discernible order or orientation. Initial anthropological examinations identified them as exclusively male, predominantly between 20 and 30 years of age, mostly over 175cm tall, with few signs of infectious diseases, and exhibiting very good dental health. The cause of death was determined to be injuries from weapons such as spears, daggers, swords and projectiles.

The numerous and varied injuries indicate combat. According to archaeologist Michaela Binder, the absence of women, children, or signs of disease rules out hospital or epidemic explanations. Military artefacts were also recovered, including a dagger, pieces of scale armour, a helmet cheek piece and spearheads.

Dating evidence, including decorative silver wiring on the dagger's sheath, places the grave between the mid-1st and early 2nd centuries AD. The find offers the first direct archaeological proof of battles along the Danube *Limes*; these were previously known only from historical sources documenting conflicts with Germanic tribes during the reign of Emperor Domitian (r. AD 81–96). Martin Mosser of the City Archaeology Department suggested the battle could have prompted the expansion of the small Roman base at Vindobona (modern Vienna) into a major military camp, marking a pivotal moment in the city's early history.

The grave was found during renovation works at a sports field in Simmering and has been investigated by Vienna's City Archaeology Department in collaboration with Novetus GmbH.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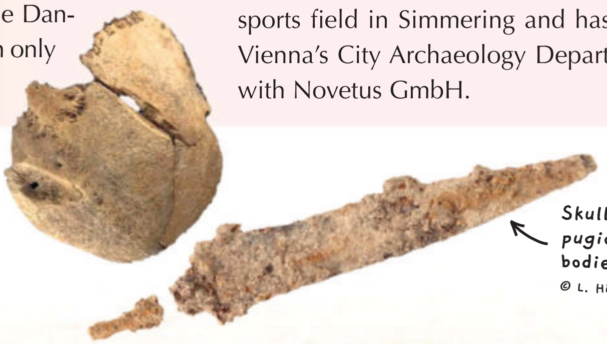
Aerial view of the Roman mass grave in Austria with 150 individuals.


Skull (with puncture wound) and pugio dagger found among the bodies in Vienna, Austria.
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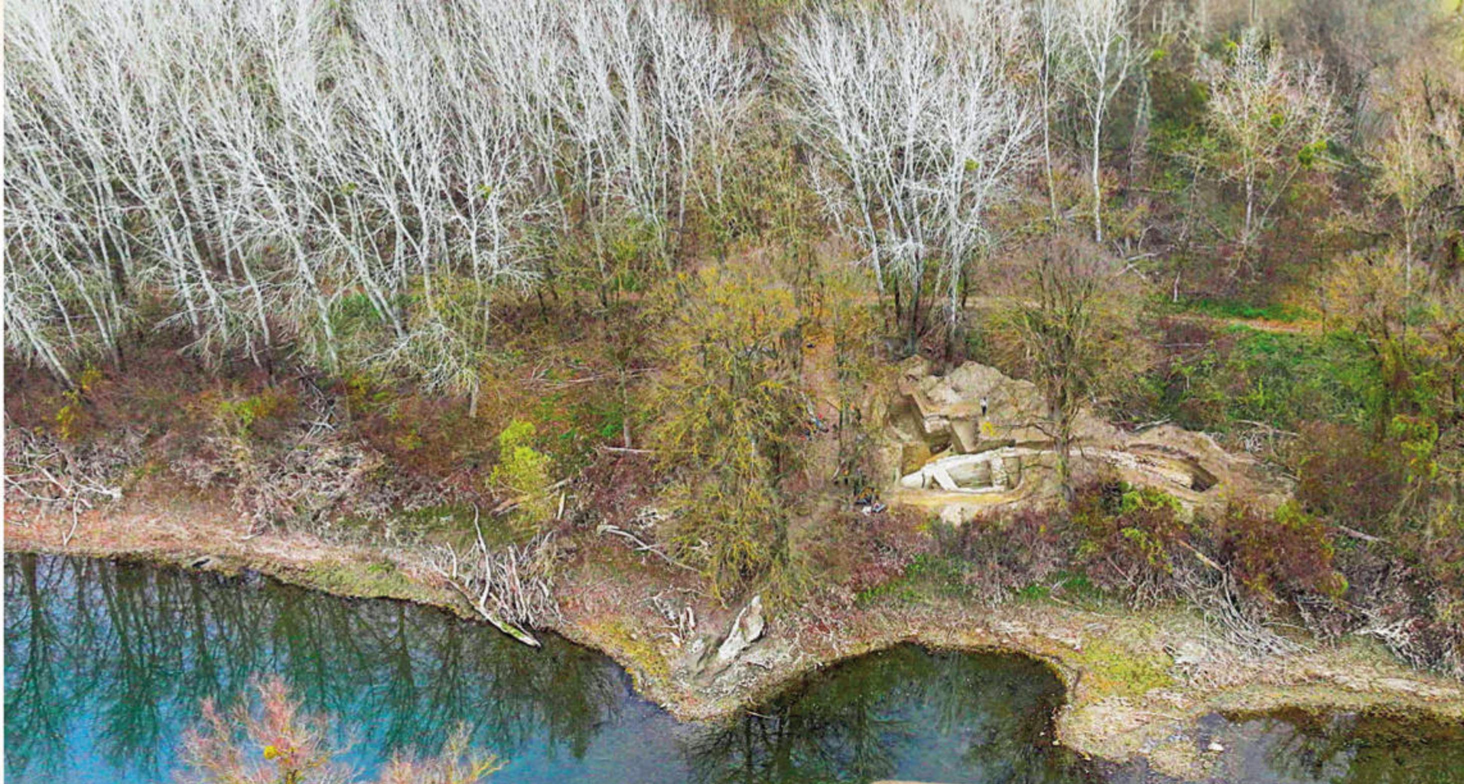


(Top) Aerial view of the excavation in the Hainburger Au. Parts of the preserved fort walls reach up to 2.65 metres in height.
© H. Wraunek, Province of Lower Austria

(Bottom) Relief from Carnuntum, second – third century AD, depicting Capricorn, which was the symbol of *Legio XIV Gemina Martia Victrix*.
© Wolfgang Sauber / Wikimedia Commons

ready been examined around 1850," explains Christian Gugl, archaeologist and head of the Archaeology of the Roman Provinces research group at ÖAW.

Built in two phases, the fort dates to around AD 170–180 during the Marcomannic Wars under the Emperor Marcus Aurelius, with renovations made around AD 260 under the Emperor Gallienus.

Archaeologists found stamped bricks from *Legiones* XIV and XV, coins, pottery, and small bronze artifacts, highlighting Carnuntum's strategic military role. The fort likely served to control river crossings along the Danube and secure trade routes, notably the Amber Road from the Baltic region to the Roman Empire.

Bronze shield boss of Marcus Ulpius, eques singularis Augusti, from Carnuntum, second century AD.
© Wolfgang Sauber / Wikimedia Commons

Previously, a similar structure along the Danube Limes (a UNESCO World Heritage Site since 2021) was known only at Iža-Leányvár in Slovakia. There was no identified permanent Roman bridge at Carnuntum, but ferry services in the area continued into the Early Modern era.

Usually built on the opposite side of a border river, such forts were tasked with monitoring crossings that were considered strategically important. Roman troops could observe both the passage over the Danube and the surrounding area. Such fortifications were particularly important for Roman border security and the control of trade routes along the Danube *Limes*.

Egyptian troops at Megiddo

Israeli archaeologists have uncovered artefacts at Tel Megiddo which might provide the first physical evidence of the presence of troops of Pharaoh Necho at the ancient citadel.

Recent excavations at the site, known as Armageddon in the Bible, revealed a large quantity of Egyptian pottery dating to the seventh century BC. The finds suggest Egyptian forces were present at Megiddo during the period described in 2 Kings and 2 Chronicles. These biblical texts recount how Josiah, a reformist king, was killed by Necho when the Egyptian army marched against the Assyrians around 609 BC. "It is important to note that the re-establishment of the site as an Egyptian stronghold had long been suspected," Dr. Assaf Kleiman of Ben Gurion University told The Times of Israel.

A selection of Egyptian pottery from Area X in Tel Megiddo. It hints at Egyptian occupation in the seventh century BC.
© Yevgeni Ostrovsky, Ben-Gurion University

Limestone block relief depicting pharaoh Necho II standing before the goddess Hathor, ca. 600 BC. The inscription reads: "I grant you every country in submission".
© Walters Art Museum

With the Egyptian finds, archaeologists also uncovered Greek pottery dating from between 630 and 610 BC. Its significance is that it raises the possibility that Greek mercenaries fought alongside Egyptian troops. Textual evidence from Greek and Assyrian sources do, indeed, confirm that the Egyptians hired foreign mercenaries at this time.

Professor Israel Finkelstein of the University of Haifa noted hints in the Bible to the participation of Lydian forces, linking the figure of Gog in Ezekiel (chapters 38-39) to Gyges, King of Lydia, whose mercenaries served Egypt.

Finkelstein added that the concept of Armageddon (a corruption in Greek of Har Megiddo) as the site of a final battle may originate with Josiah's death at Megiddo, which is seen as a turning point in biblical history.

Roman army horse cemetery found in Stuttgart

More than 100 horse skeletons have been uncovered during excavations in Stuttgart, Germany, offering rare insight into the use of equids for cavalry in the Roman army.

The discovery was made during a construction project on Düsseldorfer Straße. Dating to the second century AD, the skeletons belonged to horses used by a Roman cavalry unit stationed at Hallschlag near Bad Cannstatt, one of the most important military bases in southwest Germany at the time.

Sarah Roth, the archaeologist in charge, explained that around 700 horses were likely maintained for the 500 cavalrymen based there. Dead animals were buried about 400m from the fort and 200m from the civilian settlement, placed individually in shallow pits.

The horses died from a variety of causes: from illness, injury or other non-combat reasons over time, rather than during a single catastrophic event. In a poignant discovery, two jugs and a small oil lamp, typical grave goods for humans, were found buried with one horse, suggesting a particularly close bond with its rider.

A human skeleton was also found among the horse graves, buried face-down and without grave goods, indicating he may have been an

A hipposandal, a horse shoe, from the Roman cavalry fort at Aalen.
© Wolfgang Sauber / Wikimedia Commons

Besieged colony was larger than thought

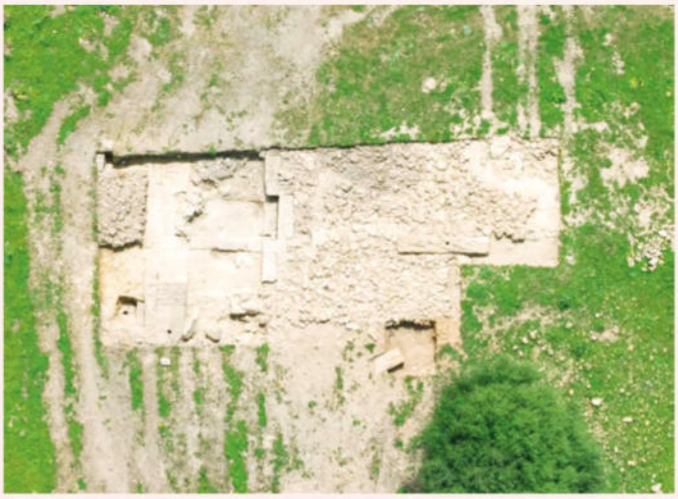
Archaeologists working in Sicily have uncovered new sections of fortified walls that dramatically alter the known perimeter of the ancient Greek city of Selinous before its fall and destruction by the Carthaginians in 409 BC.

Recent excavations by the Parco Archeologico di Selinunte have revealed the ancient city's limit lay much farther north than previously thought. Based on the new finding, researchers estimated Selinous' population at the end of the 5th century BC at 26,000 living within the city, with an additional 90,000 in the surrounding territory.

Portions of the northern fortifications, including a gateway measuring 3m across, leading to a sacred road and necropolis, have been excavated. Historians believe this vulnerable entrance may have been the route taken by Hannibal Mago's forces during their 10-day siege, described by Diodorus Siculus. He writes:

> *"all together the trumpets sounded the signal for attack and at one command the army of the Carthaginians as a body raised the war-cry, and by the power of the rams the walls were shaken, while by reason of the height of the towers the fighters on them slew many of the Selinuntians."*
> – Diodorus Siculus *Library of History* 13.55.6

Diodorus Siculus reports that 16,000 were killed and 5,000 taken prisoner.



© Parco Archeologico di Selinunte, Cave di Cusa e Pantelleria

Aerial view of the newly discovered ruins of ancient Selinunte's city gate.

Parco Archeologico di Selinunte plans to develop the area into a museum space, offering virtual reconstructions of the ancient city. The park's logo features the iconic selinon (celery) leaf, reproduced on an ancient didrachm (540-510 BC), a distinctive symbol of Selinous.

According to Thucydides, Selinous was founded by Sicilian colonists from Megara Hyblaea. It was resettled in 405, but the city was destroyed again during the First Punic War and abandoned.

Silver didrachm from Selinous depicting the famous celery (selinon) leaf, ca. 520-490 BC.
© Yale University Art Gallery

Aerial view of the Roman graveyard with the remains of over a hundred military horses in Stuttgart, Germany.
© State Office for Monument Preservation in the Stuttgart Regional Council / ArchaeoBW

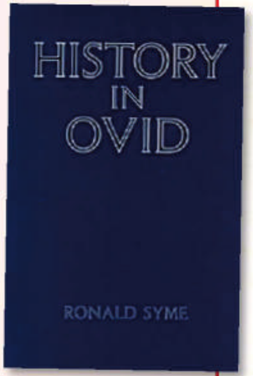
outsider to Roman society. Now completed, the excavation provides a rare opportunity to study Roman military horses. Further scientific investigations are planned to uncover details about the horses' breeding, health and the role they played in the Roman cavalry.

Stuttgarter Wohnungs- und Städtebaugesellschaft (SWSG) is developing the site. Excavations were led by ArchaeoBW and overseen by the State Office for Monument Preservation.

HAVE YOU READ?

By Ronald Syme

History in Ovid



HISTORY IN OVID

RONALD SYME

A book about Ovid in a military history magazine? Well, yes. Although far more famous for his love poetry and the scandals which saw him exiled from Augustus' Rome, Ovid's poetry of exile offer remarkable military insights. For much of the 20th century, Publius Ovidius Naso's poems *Tristia* and the *Epistulae Ex Ponto*, purportedly written in that exile to the distant Tomis (modern Constanța, Romania) was considered poetic fiction - an ironic literary figment of the poet's imagination. However, the military insights Ovid gives – both in terms of the Getae and Sauromatae who surrounded Tomis and the Roman defences, are entirely in keeping with what we know from other sources (for instance Dio Chrystostom's picture of the same lands at the end of the first century AD is the same). Syme expertly explores these and other political and military insights from Rome's most famous Augustan love poet, proving yet again that you can get insights into military history from anywhere, sometimes from the most unlikely sources.

Big cat bite marks found on skeleton

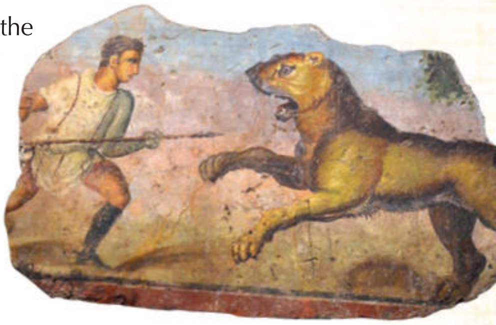
A Roman-era skeleton uncovered in York, England shows bite marks on a hip bone consistent with an attack by a lion or tiger, according to a new study.

The skeleton, 'Individual 6DT19', was unearthed at Driffield Terrace at a cemetery thought to contain gladiators' graves from the Roman city of Eboracum. He was a male aged 26 to 35 years and 171.9cm (± 3.37cm) tall. He had been decapitated with a single cut between the second and third cervical vertebrae. Notably, the researchers observed that "Peri-mortem trauma was present in the form of a series of small depressions on both sides of the pelvis, located close to the iliac crest and spines."

The depressions and indentations were consistent with the bite of a lion or tiger. While our sources describe staged fights between men and animals, physical evidence of the blood sport has been scarce. The scientists claim, "This is the first physical evidence for human-animal gladiatorial combat from the Roman period seen anywhere in Europe."

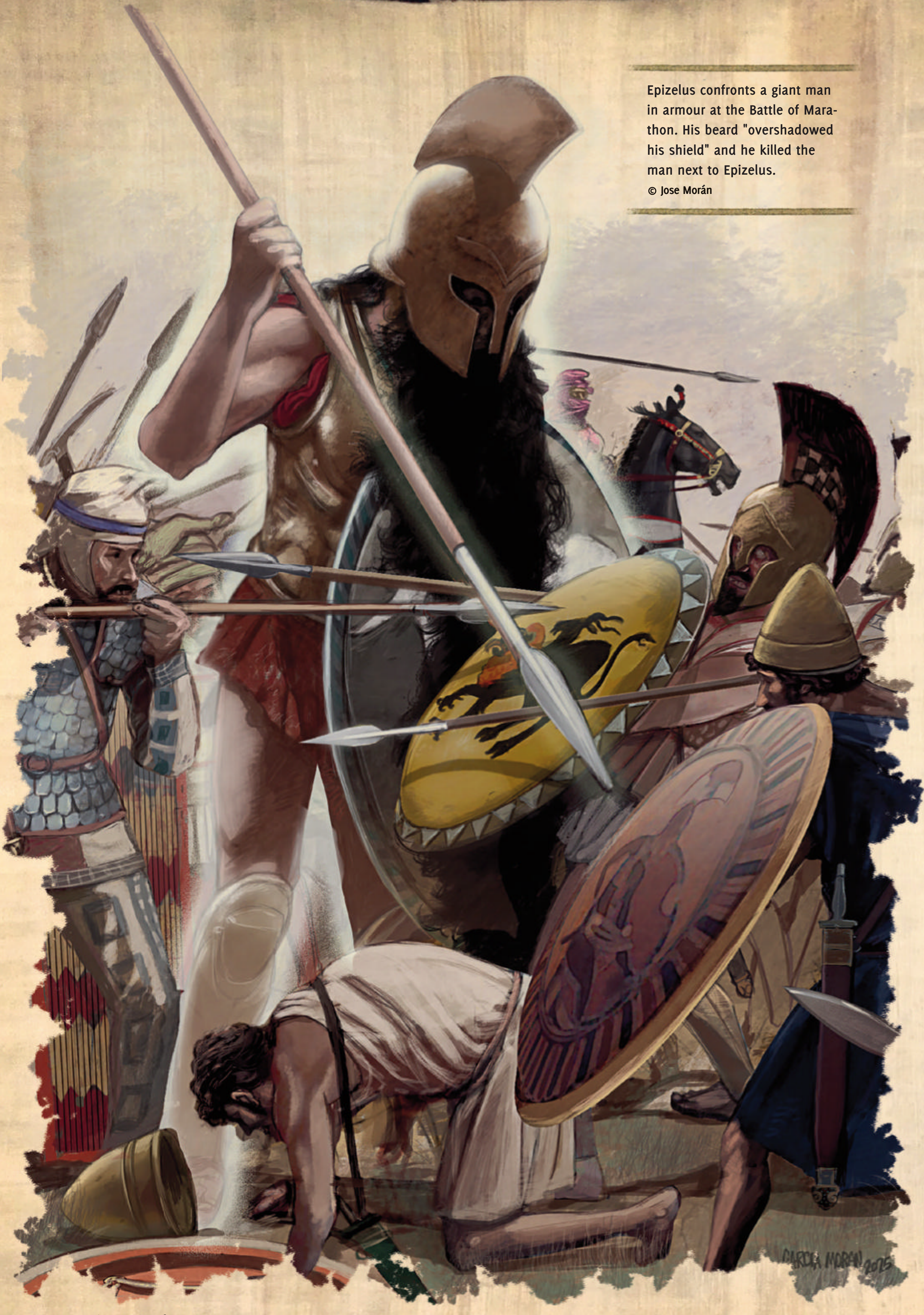
Their study argues that the man was likely a specialized gladiator or *venator*, trained to fight animals in beast hunts (*venationes*). Some scholars suggest that the man may have been a condemned prisoner. Criminals mauled to death by wild animals were also exhibited.

The research paper is published as 'Unique osteological evidence for human-animal gladiatorial combat in Roman Britain' in the journal PLOS One.



Fragment of a Roman fresco with a *venator* attacking a lioness, from Emerita Augusta (Mérida, Spain).
© Carole Raddato / Flickr

The human pelvis bone of 'Individual 6DT19' with a bite mark believed to be from a lion or tiger.
© Thompson TJU, Errickson D, McDonnell C, Holst M, Caffell A, Pearce J, et al. (2025)



Epizelus confronts a giant man in armour at the Battle of Marathon. His beard "overshadowed his shield" and he killed the man next to Epizelus.
© Jose Morán

THE RELIGIOUS DIMENSION

PTSD IN ANCIENT GREECE

By James Ford

For at least 100 years, Herodotus' story of Epizelus has been understood as the first recorded instance of either post-traumatic stress disorder (PTSD), a complex psychiatric injury from a traumatic event which leads to a long-term anxiety disorder, or a similar condition such as 'shell shock' or 'hysterical blindness'. Researchers today disagree on the merits, or even possibility, of diagnosing such conditions in the past and it is widely recognized that there are unavoidable problems with using ancient texts like this for individual diagnosis. Even if Herodotus did record suitable information on this episode, he recorded it in an unsystematic way, and the ancient author's method, from his blending of myth and history to his unreliable use of sources, prevents his text from being used as a source of reliable information.

None of this is to say that combat trauma did not exist in the ancient world. Ancient combatants did experience traumatic responses to battlefield experiences, even if we cannot easily access them in a quantitative diagnostic framework. Combat trauma may even have been more common in ancient societies, which required the routine military participation of adult males in close-quarters combat. In the case of Epizelus, and perhaps other episodes, we can talk in general about combat trauma without issuing a formal diagnosis.

Epizelus

The story goes as follows:

> *"In the battle of Marathon ... an Athenian soldier, Epizelus the son of Cuphagoras, was fighting bravely in the melee when suddenly he was deprived of both his eyes, neither having been hit in the body nor with a missile, and from that time he continued blind as long as he lived. In speaking about what happened to him, I heard that he used to say something like this: that he thought he was opposed by a man of great stature in heavy armour, whose beard overshadowed his shield; but the phantom slipped by, and killed the man at his side."*
>
> (Herodotus, *Histories* 6.117).

It seems clear that by the end of the fifth century BC, Epizelus' story was a common local legend in Athens before it was written down by the historian Herodotus. The story is also recorded the writer of some minor lives attributed to Plutarch – *Lives of Datis and Hasdrubal* (1/305b-c), partly based on Herodotus, in which a hoplite named Polyzelus is blinded at Marathon after he saw a "supernatural vision". The most important (now-lost) source for the story in the ancient world was on the Painted Stoa in Athens, completed in the later 460s BC, where, according to Aelian (*On Animals* 7.38), Epizelus was depicted fighting alongside other famous fighters at Marathon.

Reading the story, it is clearly drawn along the lines of a traditional folk-history tale, with a central hero, a *peripeteia*, or dramatic reversal, and the intervention of the supernatural in human affairs. The large figure dressed in Greek armour at the apex of the Herodotus' narrative is not portrayed as an enemy combatant, but a god or superhuman force. Herodotus described him as a *phasma*, a phantom or apparition, and as very tall, with an impractically long beard. There is nothing unusual about gods warring on behalf of each side of a battlefield and selectively killing Greeks, as they commonly do in Homeric stories, where they are reluctant to harm good and pious men like Epizelus. He is, after all, depicted as honourable and brave not only in Herodotus but also on the Painted Stoa, where he may have been shown fighting blind, and his name means 'enviable one'. As a result, the story can be read as a battlefield epiphany in the tradition of Homer, which makes sense since there were several other epiphanies on the battlefield at Marathon, such as Echetlaos (Pausanias, 1.32.5), Theseus (Plutarch, *Theseus* 35), Athena and Heracles (depicted on the Stoa), and Pan (Herodotus, 6.105–6; Pausanias, 1.28.4).

Why did the god blind Epizelus? For Greeks who had suffered inexplicable combat trauma of various kinds, the apparent random nature and meaninglessness of battlefield injuries challenged their belief in the justice of the gods. One common explanation which helped to protect belief in divine justice was that mysterious battlefield injuries were caused by a transgression against the gods. After all, the other case of mysterious blinding in Herodotus is King Pheron (2.111), who is blinded after suffering a disease of the eyes for the impiety of throwing his spear into the Nile, which was an insult to the god. But for people suffering from unexplained combat injuries, the idea that this was due to their own bad behaviour must have been alienating, upsetting, and further compounded their trauma.

Additionally, attributing mysterious injuries in war to divine punishment was at odds with the notion that the injured were heroes who had sacrificed themselves for their community. In the case of Epizelus, Herodotus preempts the idea that it was divine punishment with his (unusual) explicit observation that Epizelus was a good and honourable man.

Aristodemus

Another example that has been proposed of combat trauma in Herodotus is that of Aristodemus, the lone Spartan survivor of the Battle of Thermopylae in 480 BC, who was sent home by Leonidas because he was suffering a sickness of the eyes (9.71). Aristodemus' story has striking parallels with Epizelus'. Aristodemus is made blind, just like Epizelus, and Herodotus (again, unusually) explicitly comments on Aristodemus' honour, this time observing that he was a coward (Herodotus, 7.229–31). Unlike Epizelus, who seems to have lived the remainder of his life in Athens celebrated by his countrymen, Aristodemus was shamed and shunned by the Spartans on his return. It might not seem reasonable for Aristodemus to have been blamed for his illness: Herodotus observes that had he been alone in his illness, the Spartans would not have blamed him. However, he is contrasted with another member of the 300, Eurytus, who also had an eye illness, but turned back and rejoined the fight, despite being blind, and died alongside the others at Thermopylae.

A further example served to demonstrate Aristodemus' cowardice. Pantites, the other survivor of the 300 at Thermopylae, was sent as an ambassador by Leonidas to Thessaly and committed suicide due to the shame of his nonparticipation of the battle (Herodotus, 7.232). Pantites' case is sometimes argued to be survivor's guilt, and we can see the same kind of drive in both Eurytus' and Aristodemus' cases. A year after Thermopylae, at the Battle of Plataea in 479 BC (Herodotus, 9.71), partially blind Aristodemus charged the Persian lines alone and was killed in a mad rage that has sometimes been read as the product of combat trauma. Of this, Herodotus says that the Spartans concluded that Aristodemus had redeemed himself but criticized him both for his death wish and for exposing his fellow soldiers by leaving his formation to fight alone.

If we see Aristodemus' and Epizelus' stories as parallels in Herodotus, it is reasonable to wonder about the religious dimensions of Aristodemus' story. The Greeks recorded no epiphanies at Thermopylae: no gods appeared to fight alongside the Spartans. This is usually argued to be because the appearance of gods would detract from the mythologizing of the story as the Spartans' stand against the Persians. Nonetheless, the gods are woven into the narrative of Thermopylae. Xerxes' invasion was motivated by Greek burning of Persian sanctuaries (Herodotus, 7.8), which would drive his destruction of religious sites during the invasion, including the Athenian Acropolis. At Thermopylae, this impiety was reinforced in his mutilation of Leonidas' corpse (Herodotus, 7.238). Xerxes' impiety justified the gods' intervention to cause his destruction, sending him dreams encouraging him to invade to cause his downfall (Herodotus 7.12–18). In the sea battle at Artemisium, which occurred simultaneously with Thermopylae, the Greeks prayed to the winds to help them win (Herodotus, 7.178), and the Persians were wrecked by a violent storm, losing more than 30 per cent of their naval force. On the same day as Thermopylae, Persian ships rounding Euboea were also destroyed by a storm, which Herodotus says was an act of the gods to reduce Persian numbers and make it a fair fight (Herodotus, 8.13). Just like at Marathon (Herodotus, 6.106), the Spartans and other Greek allies could not fully participate because of a religious festival – this time, the Carneia (Herodotus, 7.206) – and so only sent an advanced force. This course of action was taken with the advice of a prophet, Megistias, and the Delphic oracle (Herodotus, 7.219–20).

So, at Thermopylae the gods were still operating in the background. It is quite possible that a Spartan might consider the gods as behind Aristodemus' eye sickness: to create a staging for his cowardice and exclude him from a battlefield in which he might compromise his fellow soldiers. This kind of explanation would have strengthened belief in the gods in a society that prioritized communal and civil values and which was traumatized by the apparent meaninglessness of suffering in war and lack of care for justice by the gods. This came, however, at the cost of the wellbeing of wounded veterans and those traumatized by loss, like Aristodemus, and it is the desire to preclude such an interpretation that explains why Herodotus was so insistent on Epizelus' virtue.

The epic tradition

There are many characters in the *Iliad* and *Odyssey* whose experiences of divine injustice, loss of socialization, and even violent 'madness' may be useful for discussions of combat trauma. Take, for instance, Odysseus, who was punished by Poseidon and kept from home for a decade, culminating in an extremely violent return in which he lies, disguises himself, ignores family and even his beloved and dying dog, and slaughters more than a hundred of his wife's prospective suitors. Or Diomedes, who is allowed by Athena to perceive the gods on the battlefield, a heightened sight that is the mirror of Epizelus' blinding, madly wounding Aphrodite and Ares on Athena's command (*Iliad* 5.121–34, 334–42, 855–62), for which later Greeks judged that he was punished by being kept from returning home and his wife's unfaithfulness.

Achilles

A particular focus for researchers is Achilles, whose character has been argued to reflect combat trauma, particularly as the prime example of the kind of rage and eventual death-wish that we saw with Aristodemus. Achilles' downfall begins with a conflict caused by Agamemnon, who, having been forced to give up his own prize, Chryseis, daughter of a priest of Apollo (*Iliad* 1.180–9), after Apollo sent a plague to the Greek camp, took Briseis, a captive given to Achilles as a war prize, as recompense. This action outraged Achilles, who is torn between killing Agamemnon and refusing to continue to participate in the fighting against the Trojans, as he decides to do with the encouragement of Athena.

Achilles' furious reaction has been argued to recall combat trauma, with a heightened sensitivity to injustice from a person in authority, and an inability to distinguish between combat and non-combat scenarios. It is also underwritten by a problem with divine justice. We might expect that Achilles would be supported by the gods, and his mother, the sea nymph Thetis, argues to Zeus that they ought to (*Iliad* 1.502–9), but Zeus refuses to get involved due to competing interests. He is not primarily concerned with the justice or fairness of the actions of Agamemnon, but with interpersonal dynamics among the gods. The fact that the Iliadic gods were not consistently just or consistently understood as being in charge of distributing justice left traumatized or injured soldiers vulnerable to suffering the meaninglessness of war. Later, Achilles weeps at the injustice of the death of his friend and comrade Patroclus. He complains that he, Achilles, could not have taken his place (*Iliad* 19.327–38). He is consequently haunted by Patroclus, who pleads for an honourable funeral, and to lay his bones alongside those of Achilles (*Iliad* 23.69–105).

Divine (in)justice and combat trauma

There is a less obvious connection with divine justice in later texts that have been connected with combat trauma. For instance, the rhetorician Gorgias (*Helen* 16–17), in around 414 BC, describes in passing how some Greeks come to associate armour and weapons so strongly with war that they became frightened and fled at the sight of them, losing presence of mind and even becoming incurably mad and unable to work. Soldier-historian Xenophon (*Anabasis* 2.6.1–15), in around 370 BC, described (critically) the Spartan general Clearchus as "a man fond of war": he kept persuading the Spartans to enter new wars, and eventually refused to disengage from combat after orders from his superiors and was exiled, continuing to fight as a mercenary abroad. These may be interesting passages in the discussion of combat trauma in the ancient world, but the connection to religion or divine justice is less obvious.

Earlier tradition, such as epic, on which Herodotus models his text, has a particular connection with soldiers suffering due to the meaningless of loss and trauma in warfare and the unreliability of the gods in arbitrating it. The lack of apparent care for justice by the gods of the *Iliad* reflects a broader tension developed in Archaic poetry, in which writers, such as the sixth-century lawmaker Solon (*Hymn to the Muses*) and a Theognidean poet (Elegiac poems 373-82), complain about the gods' lack of concern for justice and transform their conception of the gods into agents of justice. With these theological developments from the sixth to fourth centuries BC, the gods gradually took on a more moral role and explanations of apparent injustice offered readier explanations. This does not mean that soldiers stopped struggling with these issues, however.

In *Achilles in Vietnam* and *Odysseus in America*, clinical psychiatrist Jonathan Shay explains how he related to the *Iliad* and *Odyssey* as a veteran with combat trauma. He not only recognized experiences of combat trauma in those texts, but he found them helpful in understanding and processing his own. The religious dimensions of this are rarely recognized in research on combat trauma in the ancient world, but Shay discusses them, with a particular focus on justice and morality: for instance, he describes how some veterans of the Vietnam War saw themselves as righteous Catholic warriors against communist atheists. Similarly, discussions by Stuart Bell, Michael Snape, and Stephen Parker, explore how traumatized soldiers in WWI and II struggled with the apparent meaningless of suffering and arbitrariness of divine justice, sometimes leading them towards religious devotion, and elsewhere towards atheism.

It is clear today that religion is crucial in the reception of and healing from combat trauma, and reading ancient texts with a sensitivity to the religious landscape of the time can help to locate a more fruitful, historical, and relatable discussion on its history. The ancients had a range of answers to these problems. In narrativizing and mythologizing about combat in the ancient world, there is a balancing of protecting belief in the gods and protecting the wellbeing of the individual or community of soldiers and veterans. In Epizelus' case, which is memorialized at the centre of Athens, the veteran's wellbeing was protected by affirming that his injury was not his fault, but perhaps at the expense of the apparent injustice or mysteriousness of the gods' behaviour. The opposite is the case concerning the Spartan Aristodemus, where the veteran is blamed for his own injury and death, which must have been hard on the individual and community of soldiers, but protected the idea that the gods were not unjust. To some degree this reflects different attitudes towards the gods and communal and individual responsibilities in warfare between Sparta and Athens. But it more generally ties into a fundamental tension between the meaninglessness of suffering and the justice of the gods that is brought out in warfare, leaving soldiers and communities to come to their own, imperfect, conclusions. AW

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Bronze La Tène Celtic helmet discovered in Les-Martres-de-Veyre, Puy-de-Dôme, Clermont-Ferrand, France.
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WHERE DID HANNIBAL CROSS THE ALPS?

By Jona Lendering

A PUZZLE WITHOUT AN ANSWER

Ever since the Renaissance, researchers have been trying to identify Hannibal's route across the Alps. They have wasted their time, energy, and intellect. The problem is not just utterly irrelevant, but also fundamentally unsolvable.

In the autumn of 218 BC, the Carthaginian general Hannibal Barca crossed the Alps to attack Rome. Celtic tribes in the Po Valley immediately sided with him. During the subsequent Second Punic War, Hannibal tried to turn Roman allies against their overlord, and although there were several turncoats, he ultimately failed.

That Hannibal took elephants with him, makes the story of his crossing of the Alps fascinating, and many scholars have tried to identify the route of this legendary operation. In this article, we will see why this question cannot be answered, and as we will see at the end, the main question is not where, but why Hannibal invaded Italy.

Although no reliable portrait of Hannibal Barca exists, several were made in ancient times, such as this one from Capua. Now in the National Archaeological Museum Naples.
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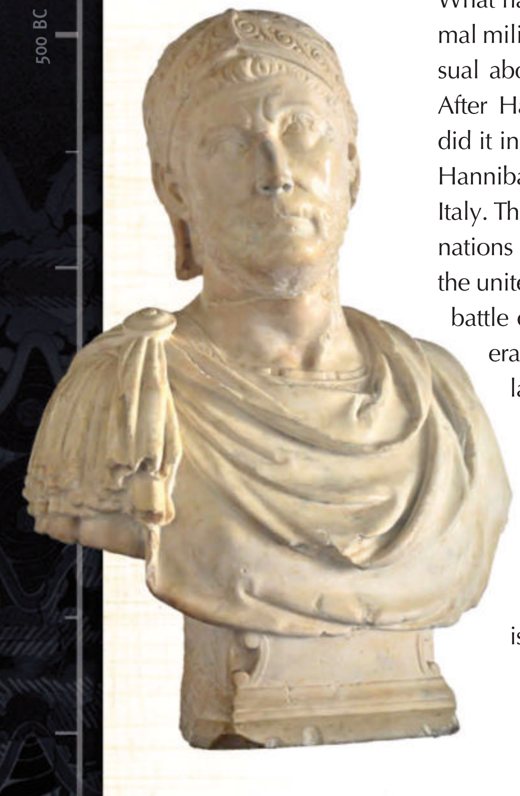


Historical topography

What has become a legend, was in fact a normal military operation. There was nothing unusual about bringing an army across the Alps. After Hannibal, his brother Hasdrubal Barca did it in 208/207 BC, and several years before Hannibal, a large Celtic army had crossed into Italy. This Celtic invasion had forced all Italian nations to unite under Rome's leadership, and the united Italians had defeated the Celts at the battle of Telamon (225 BC). In short, the operation was nearly as unique or spectacular as often presented. It was not unexpected either: at the beginning of the war, Rome sent troops north.

The topographical problem is also rather standard. Scholars often have to identify locations mentioned in ancient sources, and the procedure is a well-known sequence of puzzles.

- Step 1: read all texts
    - Step 1a: establish the texts
    - Step 1b: establish their relationship
- Step 2: distill the information
    - Step 2a: delete topical information
- Step 3: compare the resulting information with the landscape
    - Step 3a: reconstruct the ancient landscape
    - Step 3b: look for archaeological remains

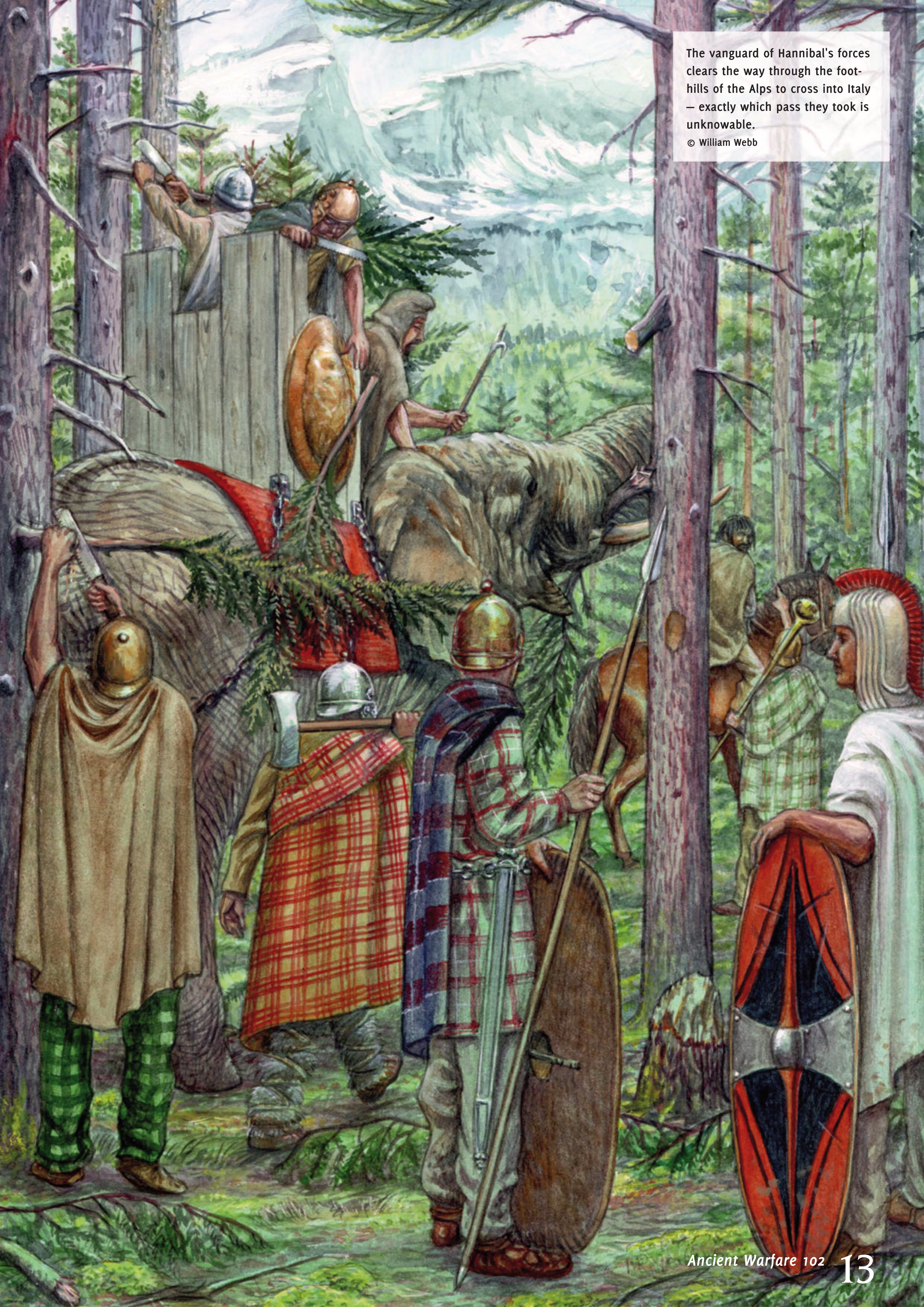
Of course scholars aim for archaeological confirmation (Step 3b), but in this particular case, this is impossible. Even if contemporary artifacts were discovered, these might belong to the Celtic invasion, to Hasdrubal's campaign, or to an unrecorded local fight. The problem of Hannibal's route is therefore essentially philological. And it is unsolvable. Step 1a contains a known unknown; we can solve puzzles 1b and 2; but the result is a set of information that is insufficient and too ambiguous to solve puzzle 3.

Two sources or one?

Reading all texts – Step 1 – is fortunately easy, because there are only two sources: the Greek historian Polybius, who completed his history of the rise of Rome in 140 BC using older sources, and the Roman historian Livy, whose account of the Second Punic War was completed in about 20 BC. Because the two accounts are almost similar, we know they are related. The problem is Step 1b: what is the relationship?

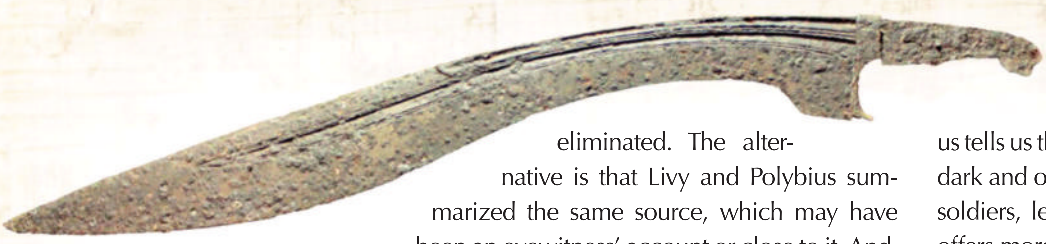
The obvious answer is that Livy copied Polybius or a translation of his work. If this were indeed the case, we might ignore Livy's information. (In scholarly jargon: Livy's text can be

Celtic iron sword with embossed iron scabbard from the second half of the third century BC.
© Renaud Bernadet / Wikimedia Commons



The vanguard of Hannibal's forces clears the way through the foothills of the Alps to cross into Italy – exactly which pass they took is unknowable.

© William Webb



A fourth century BC Iberian falcata. Hannibal equipped his troops with this weapon during the Second Punic War.

© Falconaumanni / Wikimedia Commons

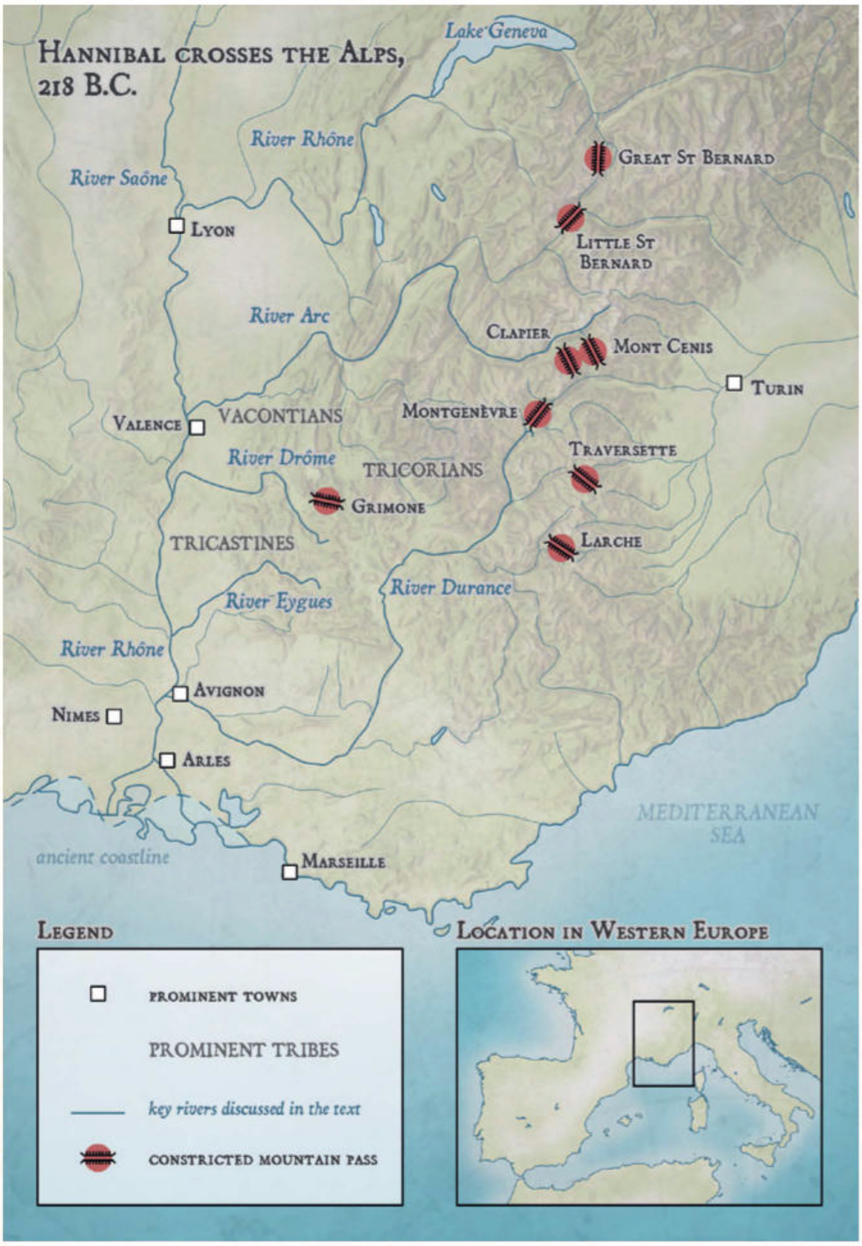
eliminated. The alternative is that Livy and Polybius summarized the same source, which may have been an eyewitness' account or close to it. And, again, there is a possibility that the Roman historian used a translation of that account.

This puzzle – Step 1b – can plausibly be solved. If we find sufficient information in Livy's text that is absent from Polybius' text but looks reliable, it is likely to be derived from an eyewitness. As it happens, there are several instances, which in themselves do not prove that Livy and Polybius used the same source, but strongly suggest this when taken together.

For example, Livy says that Hannibal's guides, recruited somewhere near the river Rhône, spoke the same language as the people in the mountains (21.32.10). Elsewhere, Polybius tells us that one night, Hannibal moved in the dark and occupied a narrow pass with selected soldiers, leaving the rest behind (3.50.9); Livy offers more specific information (21.32.12).

Let's have a look at the attack on a place that Polybius calls a *polis* (3.51.10), while Livy tells us about a *castellum*, a fort, surrounded by *viculi*, small villages (21.33.11). Fortifications surrounded by hamlets were a common settlement pattern in La Tène C Gaul. That is not something that an author like Livy, living in urbanized Italy, would have invented. Again, he passes on information that appears to be derived from an eyewitness account.

To sum up: Polybius and Livy both summarize an earlier source. Polybius focuses on information that officers might find useful, while Livy wants to tell a captivating story. But the main point is: though they are both using the same source, Livy cannot be eliminated.


HANNIBAL CROSSES THE ALPS, 218 B.C.
Lake Geneva
River Rhône
River Saône
Lyon
Great St Bernard
Little St Bernard
River Arc
Clapier
Mont Cenis
Turin
Valence
Vacontians
Montgenèvre
River Drôme
Tricorians
Traversette
Grimone
Tricastines
Larche
River Durance
River Eygues
River Rhône
Avignon
Nimes
Arles
Mediterranean Sea
ancient coastline
Marseille
Legend
Prominent towns
Prominent tribes
key rivers discussed in the text
Constricted mountain pass
Location in Western Europe

The various locations of passes and other landmarks for Hannibal's march across the alps. Despite years of arguments, the sources don't allow us to eliminate enough options.

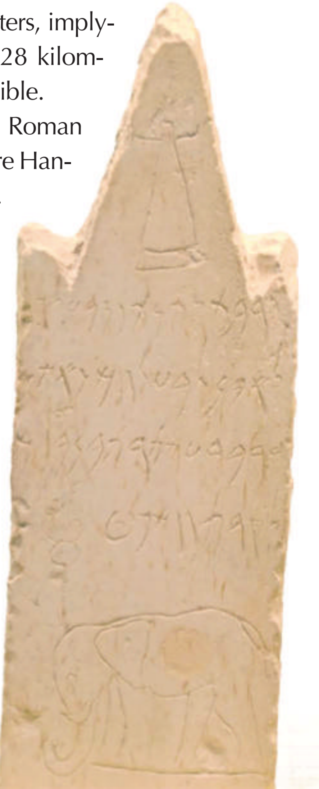
© Richard Thomson

The road to the Island

From these two sources, we can establish what happened. Having crossed the Pyrenees and passed through the Languedoc, Hannibal crossed the Rhône. He now discovered there was a Roman army at the mouth of the river. According to Livy, the Carthaginian hesitated (21.29.5), but decided to continue the operation. For four days, his men marched north.

At this point, we must examine the distance they may have covered. Every estimate between 15 and 50 kilometers per day has been put forward. Polybius mentions a grand total of 600 *stadia*, but we do not know exactly how long his *stadion* was, nor do we know exactly which starting and ending points Polybius had in mind. The distance is somewhere between 90 and 115 kilometers, implying a day's march of 22 to 28 kilometers, which is certainly possible.

At the same time, a Roman army reached the place where Hannibal had crossed the Rhône. The legionaries had needed three days to get there. Again: how many kilometers did the legionaries march in a single day? Did they manage 10 through muddy marches, or an urgent 50? The distance between Hannibal's crossing



A stele from Carthage depicting an elephant, a possibly ubiquitous symbol of Carthaginian military might.

© Livius.org

of the Rhône and the sea may have been anything between 30 and 150 kilometers.

After his four days' march, Hannibal reached a place our sources call 'the Island', which may have been a real island – recent palaeohydrological research has identified one near Valence – or the confluence of the Rhône with another river. This second solution may be the logical solution, because Polybius mentions a river that in most manuscripts is called *Skaras*, and in others *Skoras*. Livy is no help. He offers names like *Arar*, *Sarar*, and *Bisarar*. Here we have an unsolvable problem: precisely at the one point where something is specified by name, we cannot establish exactly what original text said. This is a known unknown. We cannot solve puzzle 1a.

A bronze La Tene torque, dated to the fourth-third century BC, an identifier of high rank in Celtic society.
© Metropolitan Museum of Art

At this point, Livy inserts a section that is stylistically different from the shared narrative. In a sentence of thirty-one words, the Roman author offers no less than four place names. It states that Hannibal turned left and reached the Tricastines, the Vocontians, and Tricorians, before reaching the river *Druentia*, the Durance, which is described as a braided river (21.31.9-12). We will return to this section, but for the moment we can say that Livy clearly had access to another source.

Across the Alps

From the Island, the Carthaginians marched ten days along a river, covering 800 *stadia* according to Polybius, between 120 and 150 kilometers. The story continues with skirmishes, the capture of the town / fortification mentioned above, more combat, a dangerous ambush, and the final climb towards a mountain pass that was wide enough to host a large army.

Here, Hannibal allowed his soldiers to rest. Both authors insert a short speech in which the Carthaginian points at the plain below: they have surmounted 'Italy's wall'. This speech is topical: whether it is Moses on Mount Nebo or Philip V of Macedon on Mount Haemus, many commanders have held similar speeches under similar circumstances. This does not mean that the story is untrue. After all, Hannibal may have said what was expected. Still, we must be careful. We do not know how to solve puzzle 2a.

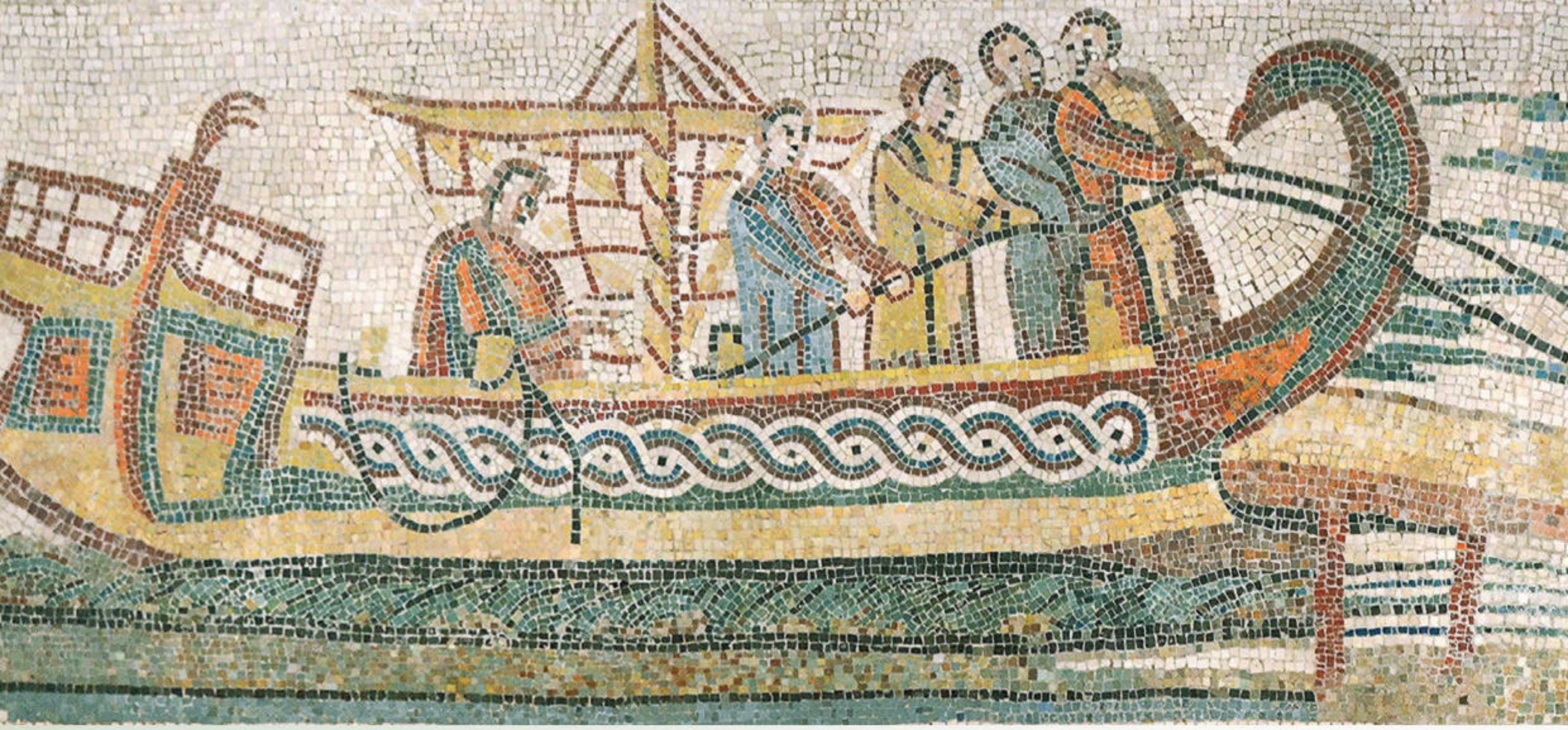
On the way down the Carthaginians first encountered snow. They also encountered a big problem: on the second day, a landslide obstructed their descent. Polybius calls it an *aporrogos* ("precipice") with a length of a *stadion* and a half (3.54.7), Livy mentions a *lapsu terrae* ("Slipped earth", i.e. landslide) of 300 meters deep (21.36.2). Whether the erosion had destroyed the road in length or depth is a known unknown, but Polybius' phrasing is less sensational and should get the benefit of the doubt.

Again, Livy inserts an anecdote without parallel in Polybius. Livy states that Hannibal's men chopped the branches off the trees all around, made a huge pile of wood, lit it, and cracked the glowing rock in their way by pouring vinegar over it (21.37.2). This is

(Top) **The *oppidum* Vapincum, behind the modern town of Gap, France — Livy's *castellum* with its outlying villages was probably a description of a Celtic fortification on a hill with settlements surrounding it.**
© Livius.org

(Bottom) **Remains of the Castle of Sagunto. In 219 BC, Hannibal besieged the Iberian settlement known as Arse (Saguntum to the Romans), an event seen as the beginning of the Second Punic War. Small sections of the Iberian curtain wall still remain on the castle itself.**
© Donarreiskoffer / Wikimedia Commons

Carthaginian silver shekel with a mahout riding a war elephant, ca. 239-209 BC.
© Sailko / Wikimedia Commons



A third-fourth century AD Roman mosaic from Veii depicting an African elephant being loaded onto a ship with ropes (and by nine men). © Carole Raddato / Flickr

Elephant rafts

The histories of Livy and Polybius record several accounts of how Hannibal crossed the Rhône. According to Livy (21.28.4-12), one version stated that the keeper of the fiercest elephant provoked the beast and then fled into the river and the animal pursued him across the river. Livy continues that "It is, however, more generally believed that they were carried across on rafts." A pier was built into the river, which connected with a raft. The elephants were driven onto the pier and then onto the smaller raft; this second raft was then towed across to the opposite bank. When the elephants felt the raft move, they became frightened. Livy says:

> *"The crowding together which resulted, as those on the outside shrank back from the water, gave rise to a slight panic, till terror itself, as they looked at the water all about them, made them quiet. Some, in their frenzy, even fell overboard; but,*

of course absurd. Ice or snow would have been sufficient to crack the enormous rock.

Having passed the landslide, the Carthaginian army could finally continue its descent. In three days, they reached the valley, from where they would bring the war to Italy.

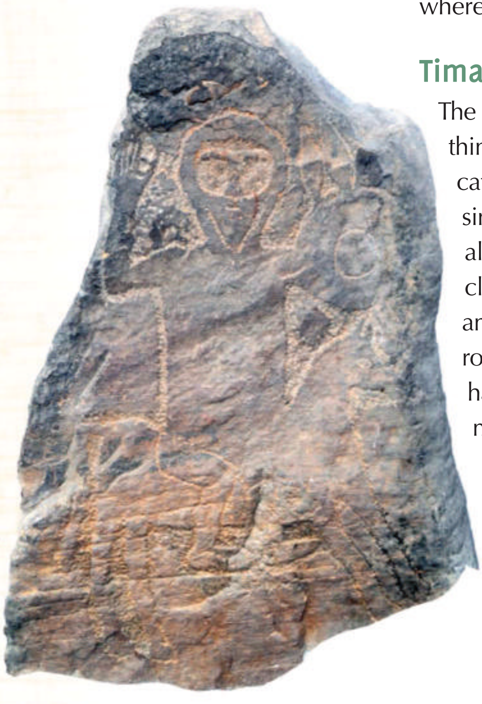
Timagenes

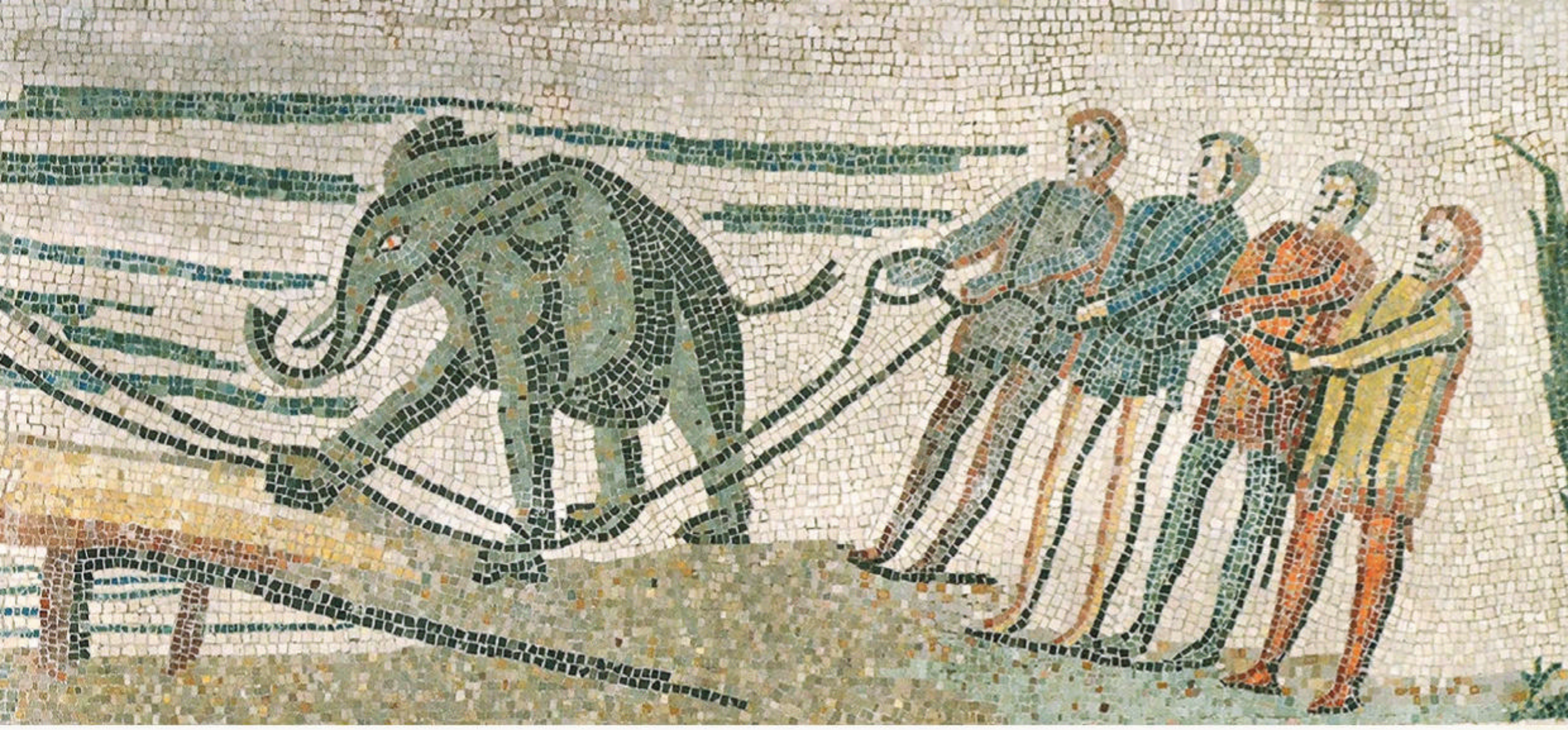
The story above contains more or less everything we know. We cannot establish the location of the Island because the two sources simply offer no useful information. We have almost no place names, and topographical clues are rare. For example, there was an ambush near what is described as a great rock, obviously not useful. Essentially, we have only two clues: the mountain pass must have been wide enough to accommodate an army, and the descent was a five days' march (whatever its length). This information is too imprecise, too ambiguous, too limited to be useful.

Livy's two extra sections, the one with the placenames and the braided river, and the one about the vinegar, may help us a little bit. Precisely these two sections are also quoted by a much later Roman historian: Ammianus Marcellinus (*Roman History* 15.10.11). They can be identified as quotes from Timagenes. This author, who lived about 50 BC, wrote a now-lost history of Gaul that was known to Livy.

Now, if Timagenes was a reliable author, the first section may be useful. It is an independent source that mentions several tribes plus, beyond those tribes and higher up the mountain slopes, a braided river. Although we do not know where those tribes lived in the third century BC, the river Durance is well-known. In its upper reaches, it is indeed a braided river with channels that diverge and join back together. This might be a valuable clue that Hannibal's army, having left the valley of the Rhône from the Island, somehow reached the Upper Durance. That would bring him to the Col de

The so-called 'Horseman of Abizar'; a stele from Abizar, Algeria, 300 -100 BC depicting a Numidian horseman with shield, javelin, and a pointed beard. © Livius.org





> *steadied by their very weight, threw off their riders, and feeling their way to the shallow places, got out upon the land."*

Polybius (3.45.6-46.12) also maintains that "a number of very solid rafts", were built. His dimensions are slightly different, and there are some changes in the construction but it is quite similar. He adds the detail that the whole was covered in dirt to make it seem like a normal path and yet, as soon as the raft moved, the elephants panicked. Some elephants fell into the river, but they made it safely to shore using their trunks as snorkels, though their mahouts drowned.

The differing accounts regarding this crossing might suggest that the two authors followed different sources or, alternatively, that they simply summarized the same source differently. Yet, as with the route over the alps, the fact was that the elephants did cross the Rhône.

A bronze currency bar from Rome. Depicting an elephant, it is now in the British Museum, and dates to ca. 275 BC.

© Lauren van Zoonen

Montgenèvre. Unfortunately, the second section quoted by Livy, the one about the vinegar, does little credit to Timagenes' reliability.

The ancient landscape

We must accept that we cannot solve puzzle 3: matching the information to the landscape. After all, we have almost no information, and what we do have, is ambiguous. It fits everywhere. Still, we can make some progress. Over the centuries, the physical environment has not really changed: there are no new mountains nor passes. The rivers are still there, and there are only a few possible locations for the Island.

The northernmost confluence is between the Saône (Livy's Arar) and the Rhône, implying that Hannibal reached Lyon before marching along the Upper Rhône to one of the Saint Barnard passes. The second option is between the Rhône and the Isère: Hannibal's army proceeded from Valence along the Isère and Arc to the Mont-Cenis or Clapier. The third option is the Rhône and the Drôme, which might have brought Hannibal to the Upper Durance and the Col de Montgenèvre.

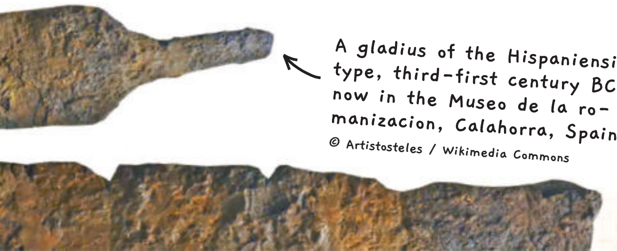
The fourth option, put forward in 1955 by Gavin De Beer, is that the Island was between the Rhône and the small Eygues. This implies that Hannibal's four days' march upstream must have started further to the south; De Beer assumed it was somewhere near Arles. In his days, this was still a possible identification.

However, recent hydrological research has shown that the ancient coastline was significantly further north than the present one. The three days' march of the Roman army began some 26 kilometers southeast of Arles. However far we estimate a legion marched in a day, after three days it must have gone beyond 26 kilometers. Therefore Arles was not the crossing point, nor was Eygues the Island.

That's at least some progress: one of the four hypotheses has been falsified. We may perhaps expect further progress from climate

LITERATURE

This article is a summary of Jona Lendering, *Hannibal in de Alpen* (2022), which deals at greater length with impossible knowledge. Aimé Bocquet situates Hannibal's crossing of the Alps in the context of the western Alps in *Hannibal chez les Allobroges* (2009).



A gladius of the Hispaniensis type, third-first century BC, now in the Museo de la romanizacion, Calahorra, Spain.

© Artistosteles / Wikimedia Commons

(Top) The valley of the Druance River. Note how the river channels separate and come back together.

© Livius.org

(Bottom) A bas-relief from Orsuna, Spain, depicting an Iberian warrior armed with a *falcata* and carrying an oval shield.

© Proyectos DIASPORA y REMAN3D / Flickr

science, which can help establish ancient tree and snow lines. That may (or not) help us find plausible locations for the snow Hannibal encountered on his descent and the forests close to the mountain pass.

Summing up

There is of course a lot more to say. Polybius offers some distances, and perhaps we will one day know what he meant. It is very likely that the shared source of Polybius and Livy was some kind of diary, which may help establish relative distances and routes. In 2017, there was a claim that excrement of Hannibal's animals had been found near the Col de la Traversette, but the biological evidence was stretched, the pass itself is not wide enough to host an army, and this theory presupposes that the erosion that Hannibal's men encountered was in fact its direct opposite, a sediment.

What it all boils down to, is this: the information we can infer from our sources is too limited and too ambiguous. It can be made to fit almost everywhere in the Alps. Compare it to a microscope: light has a wavelength between 0.38 and 0.78 micrometers, so you cannot use one to see things smaller than half a micrometer. Similarly, our sources allow a certain maximum of precision. They are sufficient to be sure that an Carthaginian army crossed the Alps, but greater accuracy is impossible.

The real questions

We are left with two questions that are more important than any one about a mountain route. Given there are so many known unknowns and ambiguities, why have so many scholars and scientists spilled so much ink on a question that is as unsolvable as it is irrelevant?

The second question is altogether different. As mentioned, in 225 a Celtic army crossed the Alps, forcing all Italian states to unite under Rome's leadership. Hannibal must have known about this campaign. He must have realized before he invaded Italy that, ultimately, he could not turn Rome's allies against their master. The real question is therefore why he tried at all. There is one clue in the remark by Livy mentioned above, that Hannibal, when he learned that there was a Roman army at the mouth of the Rhône, considered abandoning the operation. The question where Hannibal invaded Italy is a distraction from the real question: *why* Hannibal invaded Italy. AW

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Iberian spearheads from Sagunto, Spain.

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AN ALTERNATIVE GLADIATOR OATH

THOSE ABOUT TO DIE–OR NOT

By Mark McCaffery

Claudius surveyed the crowds who had come to see a mock naval battle. Unfortunately, the ships' crews would not exactly play their parts.

Imitating Julius Caesar and Augustus, Claudius had determined to exhibit a *naumachia* to celebrate the recent completion of a tunnel through the mountainside to facilitate the drainage of Lake Fucinus into the river Liris. While Julius Caesar and Augustus had held their *naumachia* in purpose-built venues, Claudius staged his naval battle on the lake, adorned for the occasion with an encircling wooden wall and temporary stands along the foreshore.

Ivory figurine of a gladiator from Narbonne, France, first or second century AD.
© Carole Raddato / Flickr

Claudius perhaps sought to surpass the spectacle of Augustus' *naumachia* in August 2 BC, when 30 triremes and biremes, complemented with roughly 3000 combatants surplus to the rowers, took to the waters. Upon the waters of Lake Fucinus, Claudius launched two opposing fleets of fifty ships each. Aboard these triremes and quadriremes were some 19,000 men according to Tacitus, and specifically described as condemned criminals by Cassius Dio. Such identification helps to explain two aspects of this spectacle.

On the one hand, Tacitus (*Annals* 12.56) describes how Praetorian Cohorts had been stationed around the lake on rafts equipped with catapults and ballistae. These were interspersed with marines aboard decked vessels, blocking off all routes of escape. It is not clear whether these measures were in anticipation of disobedience on the part of the combatants or whether the Praetorians were intent upon adding to the maelstrom of the naval conflict.

The second aspect pertains to a verbal exchange reported by our sources before the start of the spectacle. The customary oath (*sacramentum gladiatorium*) taken by gladiators prior to combat is reported by Petronius (*Satyricon* 117) as: "I will endure to be burned, to be bound, to be beaten and slain by the sword!" (*uri, vinciri, verberari, ferroque necari*). This oath endowed gladiators with a pretence of acting under their own volition as they fought in the arena. For their audience this turned contemptible slaves temporarily into honourable heroes. However, this was not the oath uttered at Lake Fucinus in AD 52.

Cameo depicting the emperor Claudius wearing a toga and holding a sceptre, first century AD.
© Sunappu-shashin / Wikimedia Commons

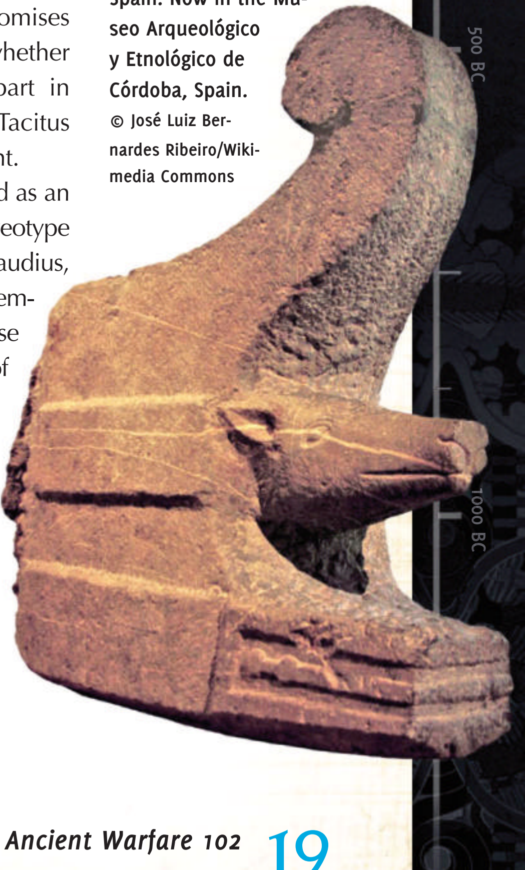
According to Suetonius (*Claudius* 21.6), on this occasion Claudius was addressed with: "Hail, emperor, they who are about to die salute you". This alternative oath may either have been specifically adopted by or enforced upon the combatants to signify that they were not gladiators, but of a lowlier status. This unusual formulation may have caused a momentary lapse of judgement in Claudius. Perhaps as a throw-away, careless response, or perhaps in a poor attempt at humour, Claudius responded "or not" (*aut non*). The combatants interpreted this as presenting them with the option not to fight, hence a pardon. In the account provided by Cassius Dio (61.33.4), the combatants had planned to elicit just such an ambiguous response, thus providing the pretext for inertia.

In Dio's account, upon being ordered to engage regardless, the combatants proceeded to sail through each other's lines inflicting minimal injury. Suetonius and Cassius Dio state that the combatants were eventually induced to fight, either by threats and promises or by force respectively. However, whether the Praetorian Cohorts played any part in this remains remains unknown, since Tacitus makes no mention of the entire incident.

Whilst his story has often been read as an almost comical scenario helping to stereotype the career of the allegedly dull-witted Claudius, upon closer consideration the words themselves are imbued with *potentia*. These oaths are pregnant with connotations of social status, honour, and dishonour, obvious to contemporary Romans. It demonstrates how we can enrich our understanding of ancient texts and events by careful reading. AW

Mark McCaffrey is a regular contributor to* Ancient Warfare *magazine.

A pair of Roman iron handcuffs or shackles found in Dyrrhachium, ancient Illyria (now Dürres, Albania).
© Livius.org



A Roman sculpture of a ship's prow with the ram and *proembolion* from first century AD Spain. Now in the Museo Arqueológico y Etnológico de Córdoba, Spain.
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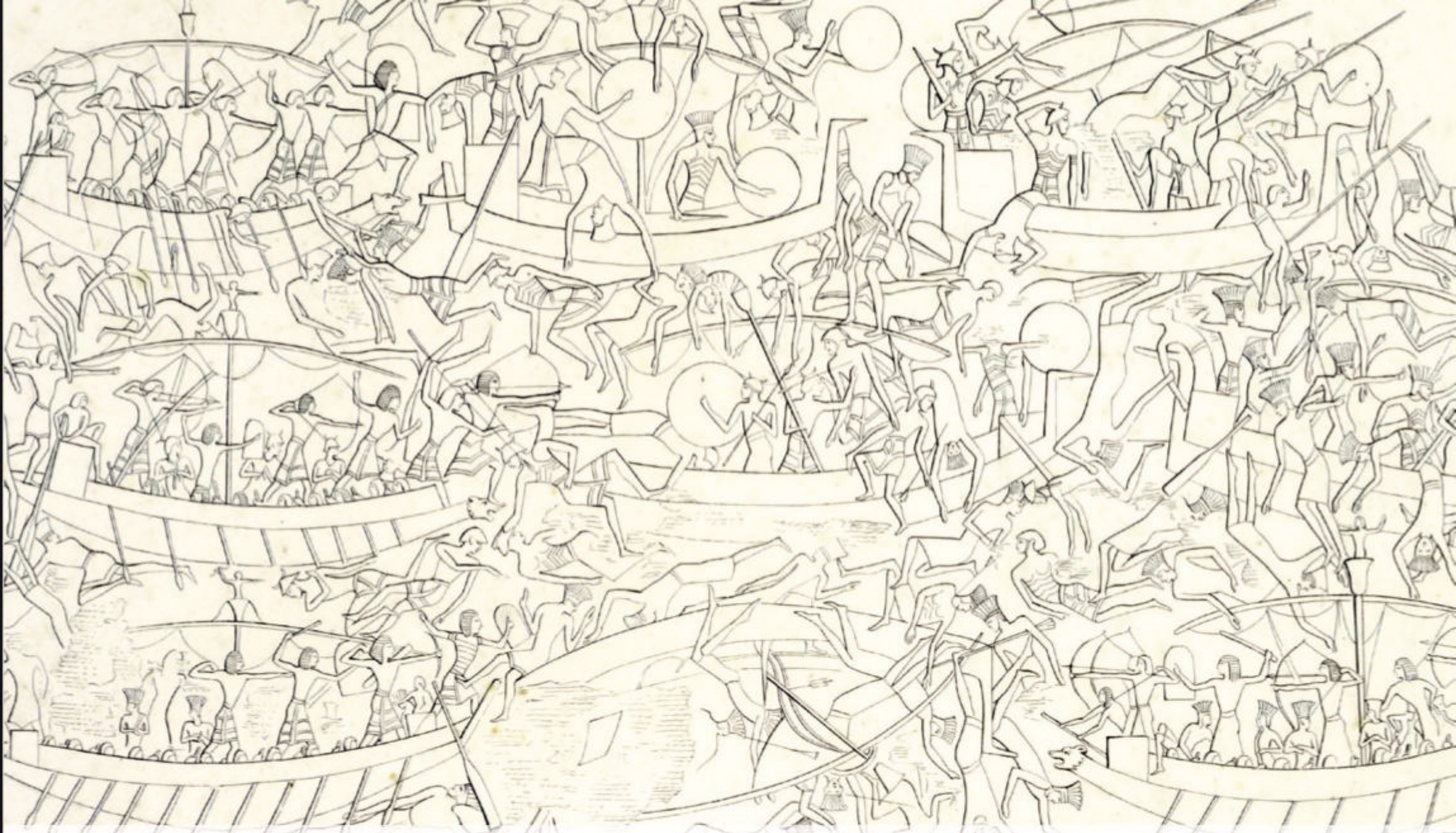


Detail of the Battle of the Delta, showing Egyptian ships fighting those of the Sea Peoples. Horned helmets are worn by warriors on several ships.

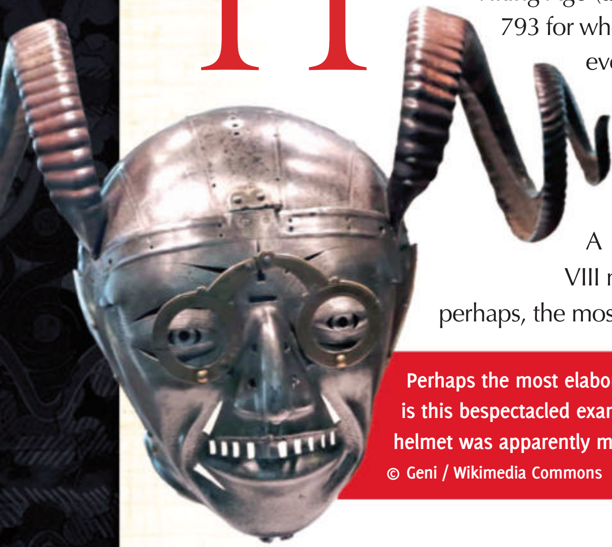
THE MYSTERY OF HORNED HELMETS

By Murray Dahm

AN ANCIENT CONNECTION

If you mention horned helmets, most people won't think of anything ancient at all. In fact, what comes to mind is entirely ahistorical horned Viking helmets! It is surprising just how common this idea is, despite its lack of a historical basis. This pervasive falsehood is often blamed on the composer Richard Wagner, and especially on his *Der Ring des Nibelungen*. Wagner's characters wore winged helmets, however, not horned ones. The phenomenon of the horned Viking helmet can nonetheless be traced to the nineteenth century, but the general idea of horned helmets is, in fact, an ancient one – a very ancient one.

Horned helmets persisted in ancient art for a remarkably long time across many different cultures long before the Viking Age (taking the traditional date of AD 793 for when the 'Viking Age' began). They even persisted beyond it – several heraldic depictions of medieval helmets have obvious horns but were not associated in any way with Vikings. A famous helmet for King Henry VIII made between 1511–1514 had, perhaps, the most elaborate horns ever created.



Perhaps the most elaborate horned-helmet ever created is this bespectacled example made for King Henry VIII. The helmet was apparently modelled on one of his court fools.
© Geni / Wikimedia Commons

Late Antiquity

Moving backwards from the Viking Age, we come across horned helmets with great regularity. We can see apparently horned helmets on the decorative panels of the Sutton Hoo helmet (ca. AD 600), even though contemporary helmets do not appear to have had horns. The Torslunda plates from Öland in Sweden also show a figure wearing a horned helmet. A similar depiction appears on both the Finglesham Buckle, found on the east coast of Kent in the UK in 1964, and the Ekhammer pendant (or Ekhammer Dancer), found in Upland, just north of Stockholm. Both finds are dated to ca. AD 550–700. Many of these fig-

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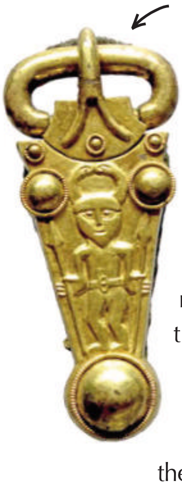
ures appear to be gods or figures from mythology or ritual, and they continued to be depicted with horned helmets despite the fact that practical horned helmets had long since disappeared. But the idea had persisted.

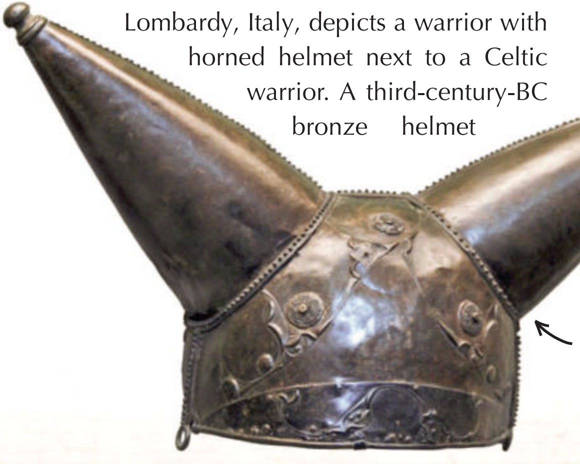
Iron Age horned helmets

Perhaps the most famous horned helmet is the Waterloo Helmet – so called because it was found in 1868 in the River Thames close to Waterloo Bridge. Probably dating to ca. 150–50 BC, this bronze, La Tène-style helmet does, indeed, have two horns. They were probably ritualistic in function but have often been included in reconstructions and depictions of practical helmets. There are other horned helmets from a Celtic context, such as those depicted on different panels on the Gunderstrup Cauldon (dated to the first century BC from Denmark) or on the Arch of Orange (dated to ca. 55 BC). These depictions, however, show more naturalistic, curved horns rather than the Waterloo Helmet's stylistic ones. The Torrs Pony cap and horns, dated to ca. 200 BC, discovered in a peat bog at Torrs Loch in Scotland in the 1820s, were found together, but whether the horns were originally part of the cap is debated. These naturalistic horns may have been added to the cap later, since no other physical helmet with such naturalistic horns exists, although there may be depictions.



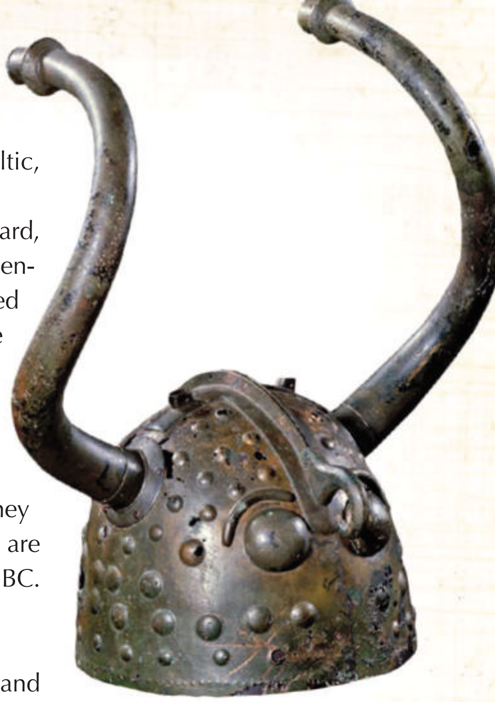
The Finglesham Buckle shows a warrior god or mythical figure wearing a horned helmet.
© Doyle of London / Wikimedia Commons

Diodorus Siculus, writing in the first century BC, describes how, among the Celts, "in some cases horns are attached to the helmet" (5.30.2) to give the wearer an appearance of great size. This description is certainly borne out in the surviving finds of Celtic culture from the fourth and third centuries BC down to the first century AD. A third-century-BC bronze figurine from northern Italy shows a naked Celtic warrior with a horned helmet; and the Bormio stele, from Bormio in Lombardy, Italy, depicts a warrior with horned helmet next to a Celtic warrior. A third-century-BC bronze helmet from Bryastovets in Bulgaria, also Celtic, found in 1988 also has horns.



The so-called Waterloo Helmet, a bronze helmet with La Tene repousse decorations and stylized horns.
© Gary Todd / Flickr

Figures from the Grevensvænge hoard, found on Zealand in Denmark, first mentioned and drawn in 1779, also have horned helmets. Although two of the figures have been subsequently lost, one of the surviving two figures has a horned helmet consistent with other finds. The Veksø horned helmets were found in a peat bog also on Zealand in 1942 and, again, they have curved, naturalistic horns. These are usually dated to the ninth or tenth century BC.

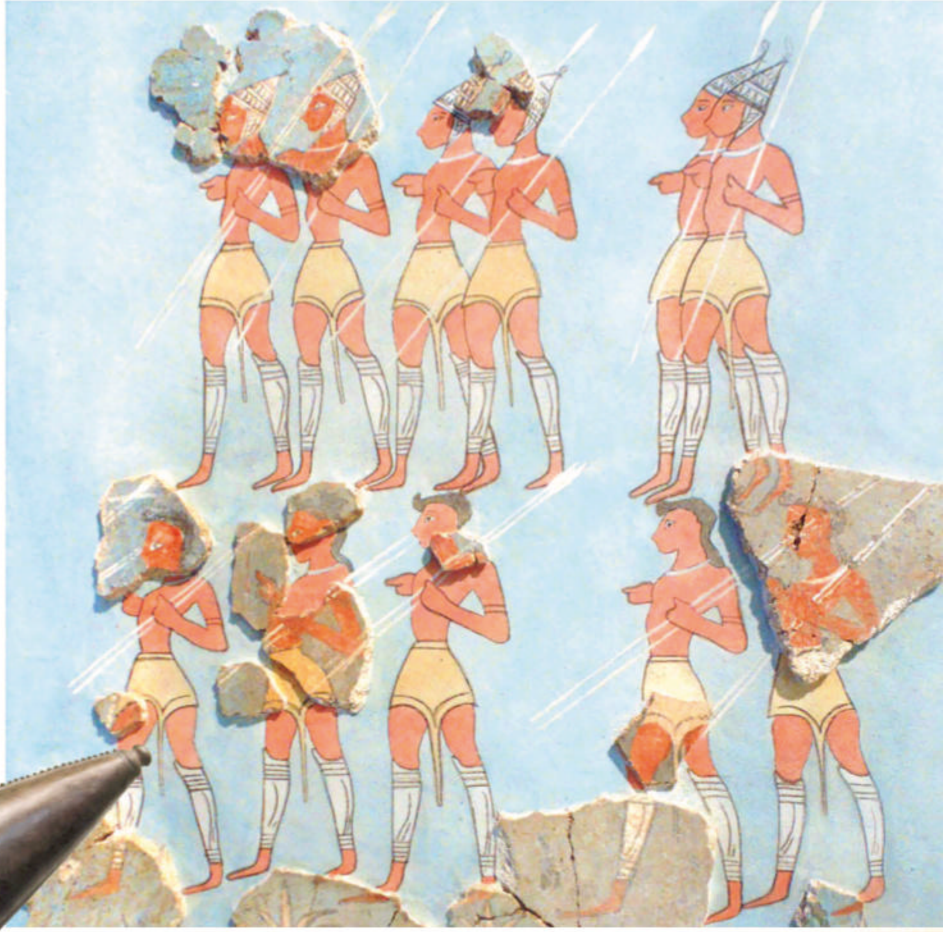


One of the so-called Veksø helmets: a bronze helmet found in the Brøns bog, and dated to the Nordic Bronze Age (1700-500 BC), equipped with exuberant, naturalistic horns.
© Lennart Larsen / National Museum of Denmark

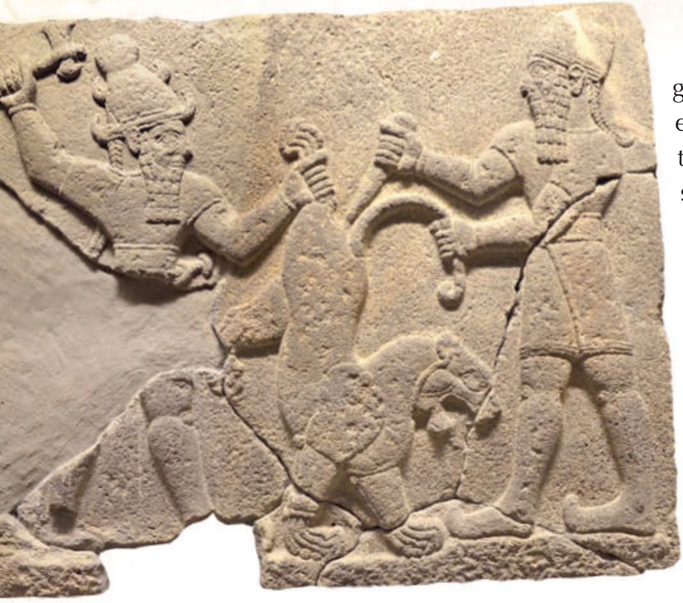
Myth and the Bronze Age

Surviving examples of boar's tusk helmets and the description of one in the *Iliad* (10.260–265) may also connect with 'horned' helmets, although they are of course made of tusks, not horns. These helmets date to the twelfth century BC and earlier, but, despite that fact, Homer's audience was expected to know what they were, whether the *Iliad* reflects the reality of Homer's time (for argument's sake, the mid-eighth century BC), or not.

Both the *Iliad* and the Hellenistic *Argonautica*, the epic story of Jason and the Ar-



Reconstruction drawing of a Mycenean fresco from Thebes with men wearing boar tuks helmets.
© O.Mustafin / Wikimedia Commons



A detail of Neo-Hittite relief from Carchemish, showing two figures killing a lion. The figure on the left is the Syrian Storm God, wearing four-horned headgear.

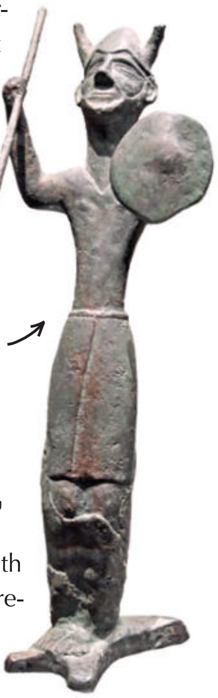
© Carole Raddato / Flickr

gonauts, contain a rare epithet possibly relating to horned helmets, describing them as *tetraphalos* or *tetraphaleros*, terms usually translated as "four-horned". A *phalos* was the "horn" of a helmet, and although *phalara* may have been something different, the two terms seem to have been regarded as synonymous, although they occur nowhere else in the surviving literature (*Iliad* 5.743; 11.41; 12.384; 22.315 and Apollonius' *Argonautica* 2.919; 3.1228). Words containing *phalera* or *phaleros* may have meant something slightly different, however, and they have also been translated as 'bosses', 'bolts', 'peaks', or even 'plumes'.

There are several depictions of horned helmets in Greek art, but none are four-horned, even accounting for two dimensional and flat drawing styles. The warrior krater from Mycenae, dated to the twelfth century BC, seems to show horned helmets but they certainly do not have four horns. These helmets have two frontal horns, and we may see these same helmets on bronze statuettes from Enkomi/Tuzla on Cyprus, dated to the twelfth century BC. Migrants from Mycenae arrived on Cyprus in the thirteenth and twelfth centuries BC. Known as the horned god and ingot god, these figures have helmets with two frontal horns similar to those shown on the Mycenaean warrior krater. Elsewhere, and earlier, on New Kingdom Egyptian reliefs, such as at Abu Simbel in the thirteenth century BC, the Sherden (or Shardana) warriors are depicted with horned helmets. There, they are shown as members of Rameses II's guard and have two horns on their helmets (perhaps recalling the *Iliad* references at 5.743 and 11.41). We also find them – and their horned helmets – depicted on the Kadesh reliefs. The origins of the Sherden remain murky, but perhaps their horned helmets might provide a clue.

The closest depiction to an obvious four-horned helmet is, in fact, the depiction of the Syrian Storm God from the reliefs at Carchemish, dating to the tenth century BC. Here, again, there are several images with two-horned helmets but one with four, shown on the figure of the Syrian Storm god himself – another divine figure associated with a four-horned helmet. Perhaps, therefore, the rare phrase in Greek epic is a remnant of a helmet with divine connections. In the *Iliad* and *Argonautica* such helmets are associated with Athena (Zeus), Hera, Ares, Hephaestus, and Persephone, even though such helmets are also worn by mortals and may be an indicator of a moment where divinities intervened in the lives of mortals.

Helmets on votive figures from the Nuragic culture on Sardinia are also horned (see



Statuette of a Cypriot diety from Enkomi. The horns on his helmet are yet another variant.

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Drawing of one of the reliefs at Abu Simbel, showing warriors wearing horned helmets. They are believed to represent the Sherden or Sardana.

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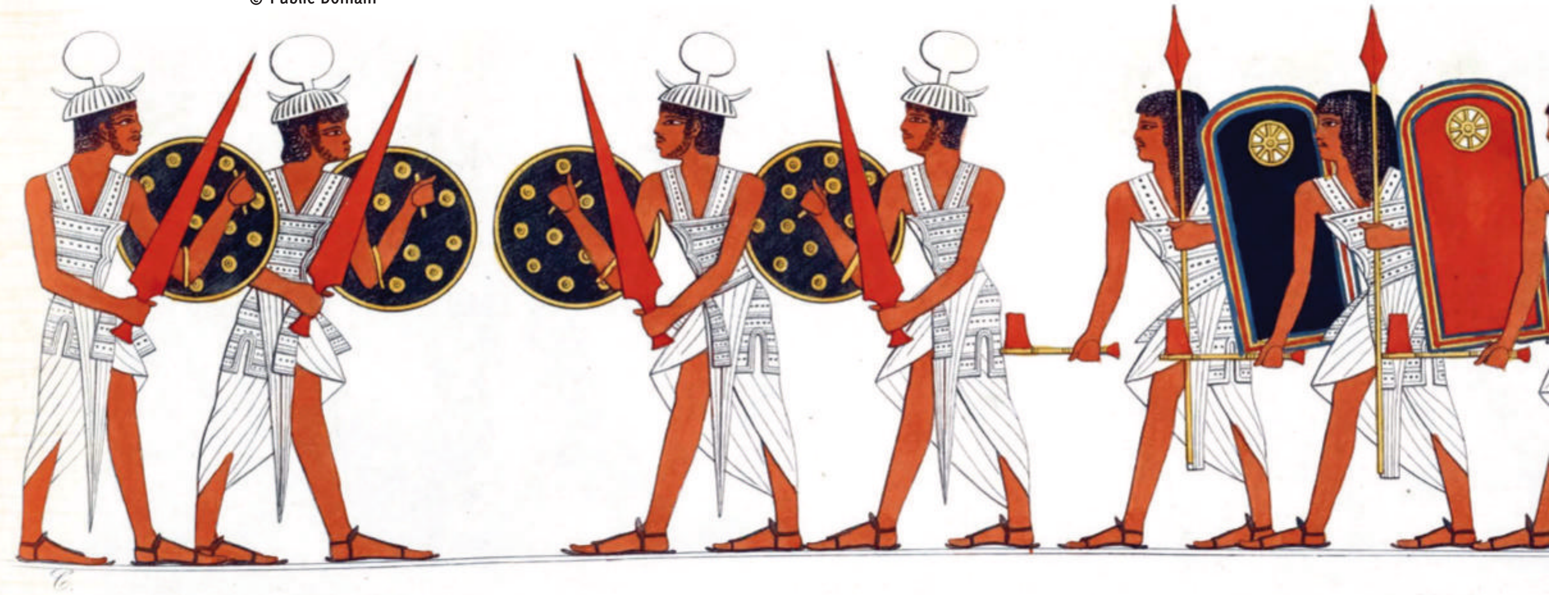
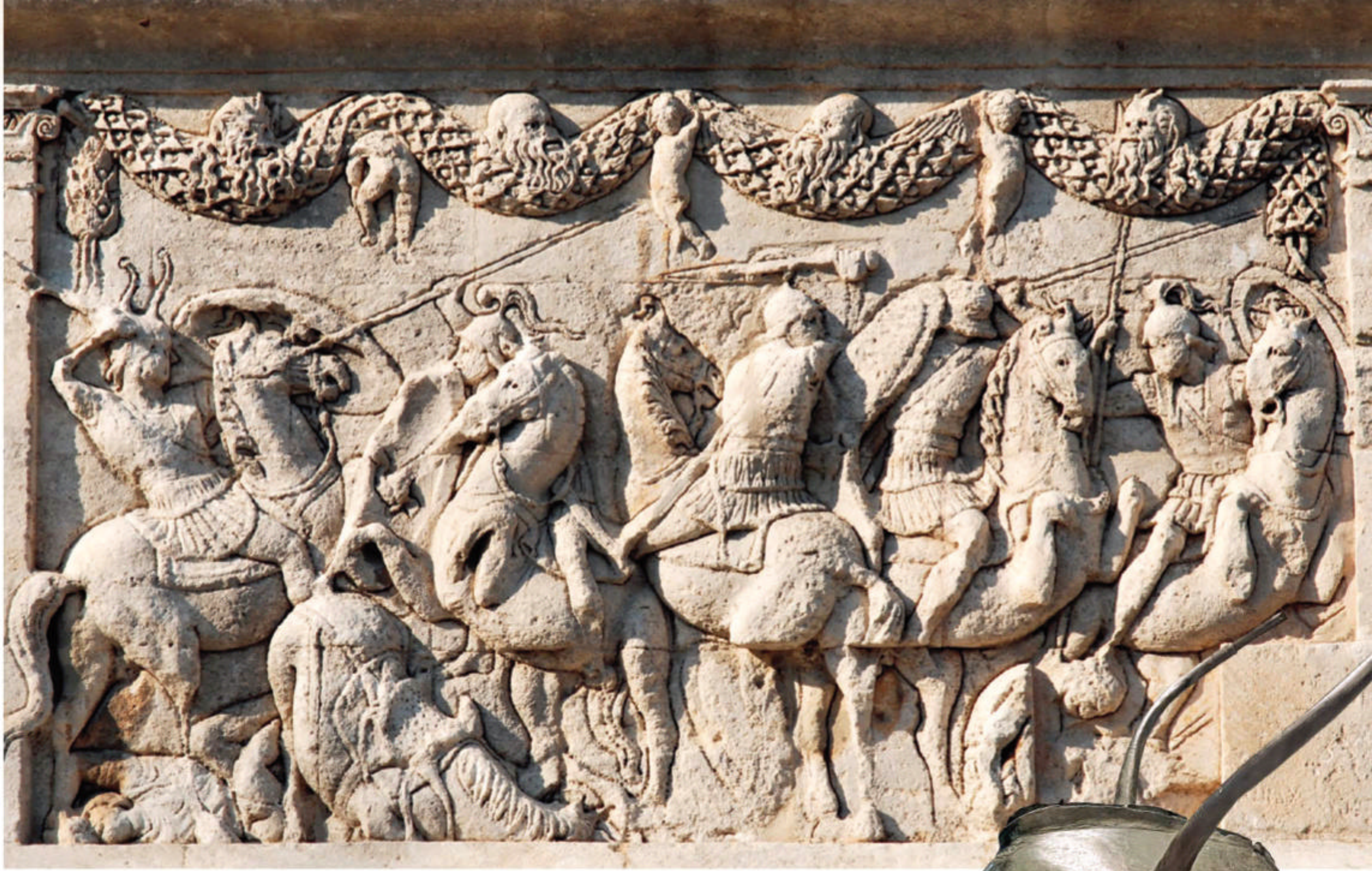




(Top) **One of the reliefs from the Mausoleum of Glanum, dated to ca. 40 BC. This relief represents a cavalry battle, and the horseman on the outer left wears a horned helmet.**

© Cancre / Wikimedia Commons

(Bottom) **A bronze Thracian helmet with horns, dated to the fourth century BC (similar to the Bryastovetz Helmet from the third century BC).**

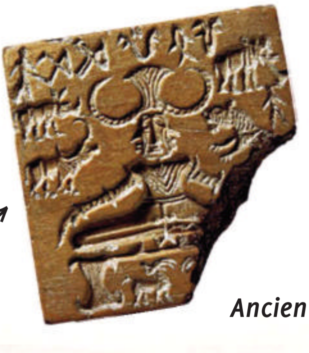
© Tegyrios / Wikimedia Commons

AW XV.3). There is an apparent similarity between these helmets and those depicted on the warrior krater from Mycenae and the statuettes from Enkomi/Tuzla on Cyprus. The helmets have two frontal horns, although they are not of precisely the same design or positioning. The Mont'e Prama statues of the Nuragic culture may also have such helmets. The similarity of such figures (and their helmets) has given rise to some identifying both the Nuragic Sardinians and the Mycenaeans with the Sea Peoples, especially the Sherden of Egyptian reliefs.

Perhaps the oldest depiction of a horned helmet, or at least a horned headdress, however, seems to be the steatite seals from the Indus Civilization, possibly dated to ca. 2600–1900 BC, from Mohenjo-daro (now in Pakistan). Discovered in 1928/9 and now in the National Museum, New Delhi, one seal depicts a figure that appears to be wearing a horned helmet or headdress. Other seal figures also depict a horned helmet or headdress. The interpretation of the figure is controversial, however. Some have identified the figure with Shiva or his Vedic predecessor, Rudra – otherwise known as Pushupati – all of whom are depicted in a yogic position with crossed legs. Later depictions of the god do not share the horned headdress / helmet aspect, however. It has also been argued that these figures depict another horned deity entirely. Another contender for the oldest depiction of a horned helmet is the Victory Stele of the Akkadian king Naram-Sin, dated to 2254–2218 BC, wearing a horned helmet leading an army to victory over the Lullubi people of the Zargos Mountains.

The horned helmet, therefore, had a long, long history before it became associated with Vikings in the nineteenth century. Many depictions and descriptions of such helmets occurred in the ancient world. Although our information is incomplete and somewhat confusing, those depictions occurred across a vast span of time and across many different cultures. Yet the basic elements of the representations remain similar: ritual and religious contexts seem to tie the various different horned helmets together. Horned headgear is worn by royal figures, or connected to gods or religion, although perhaps not in the case of the Sherden warriors. AW

Murray Dahm is the assistant editor of* Ancient Warfare *magazine.



A Pashupati Seal, dated to 2600–1900 BC, depicting a seated figure wearing a horned helmet.

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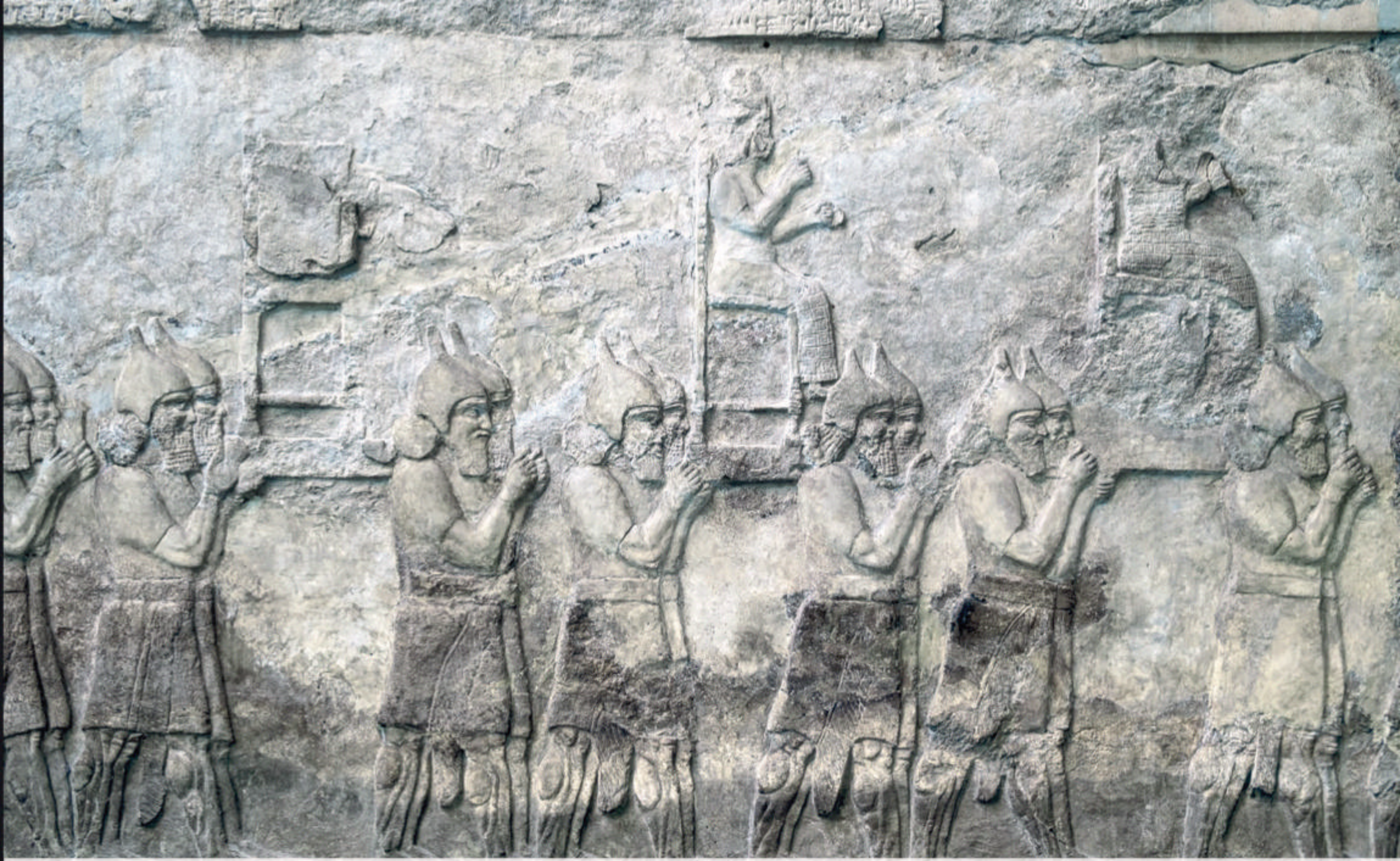


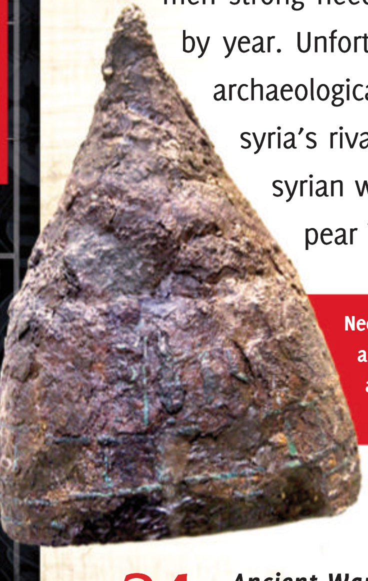
Relief from the Palace of Tiglath-Pileser III in Nimrud, showing Assyrian soldiers carrying away statues of deities from a defeated enemy, ca. 745 BC.

THREE CENTURIES OF BRONZE AND IRON

ASSYRIAN HELMETS

By Tamás Dezső

For the three centuries of the Neo-Assyrian era (934/911-612 BC), the Assyrian army was active every campaigning season, conquering vast territories of the ancient Near East (see *AW* XIV.6). During that period, the Assyrian empire raised enormous armies and it is plausible to suppose that the 'arms industry' played a leading role in the Assyrian metal industry in both importance and magnitude in terms of orders and production. After all, an army 100,000–150,000 men strong needed a huge amount of equipment year by year. Unfortunately, this is hardly reflected in the archaeological record. In contrast to, for example, Assyria's rival state Urartu, hardly any pieces of Assyrian weaponry have survived the ages to appear in the excavated archaeological records.



Neo-Assyrian iron helmet, 800-700 BC, hammered out of a single piece of iron and decorated with a bronze inlay around the base of the helmet.
© Gary Todd / Flickr

Fortunately, this lack of archaeological evidence is compensated to a degree by the written sources and the famous representations of thousands of soldiers on the surviving palace reliefs. The fact that the depictions of equipment on these reliefs closely matches those few items that have been found, indicates these are a good complement.

Helmets for the army

The numbers of helmets required by the Assyrian army on a yearly basis, and by extension produced by the Assyrian arms industry over time, can be judged from the estimated size of the Assyrian army, but from inscriptions enumerating captured booty as well. The Letter to the God (Ashur) of Sargon II (721–705 BC) lists the booty captured during Sargon's eighth campaign (714 BC) in the temple of Haldi at Musasir: 33 silver chariots, bows, quivers, maces, shields, helmets, spears, and military standards; 25,212 bronze shields; helmets and armour; 1514 different types of bronze spears; 305,412 bronze swords, bows, quivers and arrows. This was an important booty, but only one

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out of the hundreds of times loot was taken during the Neo-Assyrian period.

An indication of both the numbers of required equipment and the high level of centralised preparation and administration in the Assyrian empire is in the *ekal masharti* ("review palace") complexes in imperial cities such as Nimrud and Nineveh. As one inscription describes it:

> *"The review palace... built to maintain the camp (and) to keep thoroughbreds, mules, chariots, military equipment, implements of war, and the plunder of enemies, everything that the god Aššur, king of the gods, gave me as my royal share... At new year, in the first month, yearly, without ceasing, let me inspect in it all of the thoroughbreds, mules, camels, military equipment, implements of war, (and) all of the captured enemy soldiers."*

Ivory plaque with an Assyrian wearing a conical pointed helmet.
© Osama Shukir Muhammed Amin FRCP/ Wikimedia Commons

These enormous complexes contained both a palace for the king, a parade ground (and a larger parade ground outside), and workshops and arsenals for everything the army might need. The report of one inspection of such an arsenal records the presence of no less than 36,422 bows.

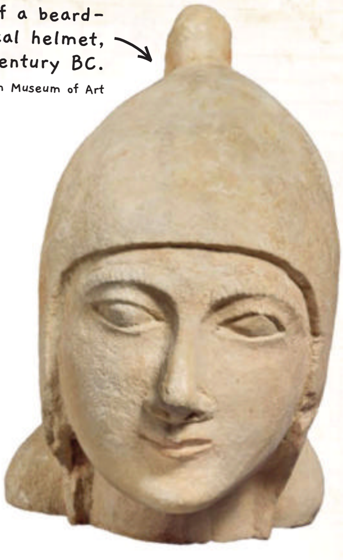
Assyrian helmets

One of the most characteristic pieces of Assyrian defensive equipment was the conical helmet that comes almost to a point. This was the exclusive helmet of the Assyrian army during the Neo-Assyrian period and it makes sense to suppose that the origins of the design go back to the Middle-Assyrian period. This conical/pointed type was used by regular and heavy Assyrian infantry, as well as by Assyrian cavalry and chariotry. It has to be stressed, however, that this type of helmet was exclusively worn by the ethnic Assyrians of the polyglot imperial army. It was they who provided the soldiers for the heavy infantry, cavalry and chariotry and only a few units of cavalry and chariotry were enlisted from foreign sources.

The other type of helmet represented on the Assyrian palace reliefs is the crested helmet, which was exclusively worn by the *Gurru* auxiliary spearmen, the soldiers of the light infantry of the Assyrian army. This crested helmet was not of Assyrian origin. Early crested helmets are known from Urartu and Hasanlu, but they became widespread in the ranks of the Assyrian army at the latest from the reign of Tiglath-Pileser III (745–727 BC), who enlisted foreign soldiers in his army.

These helmets were originally made of bronze (in the ninth-eighth centuries BC), but from the late eighth century BC at the latest, Assyrian blacksmiths started to manufacture these helmets in iron – they are the first-ever iron helmets known in world history. Production of iron helmets did not begin again for centuries after the collapse of the Assyrian Empire in 612 BC; it was then taken up by the Celts of northern Europe.

Neo-Assyrian helmets are recognizable by their shape, but even more so by a distinctive combination of reinforcing ribs and embellishments. This decorative system went through


Cypriot limestone sculpture of a beardless male wearing a conical helmet, first half of the sixth century BC.
© Metropolitan Museum of Art

(Top) Line drawings showing the two styles of decoration. Left is the bronze style, with reinforcing ribs, right, the iron helmet with bronze inlay and frame for a king or deities.
© Tamás Dezso

(Bottom) Assyrian soldiers defeat their enemies. Note how the iron sword and helmets are painted blue.
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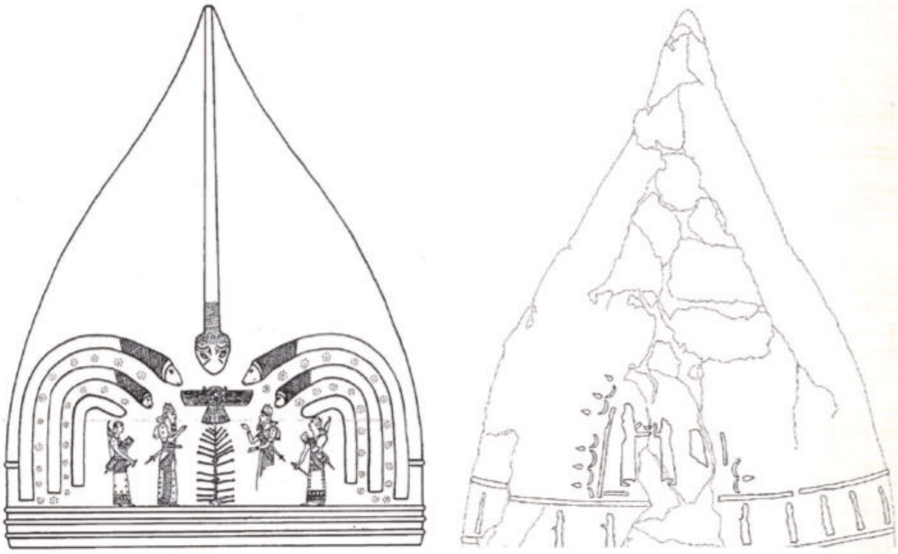
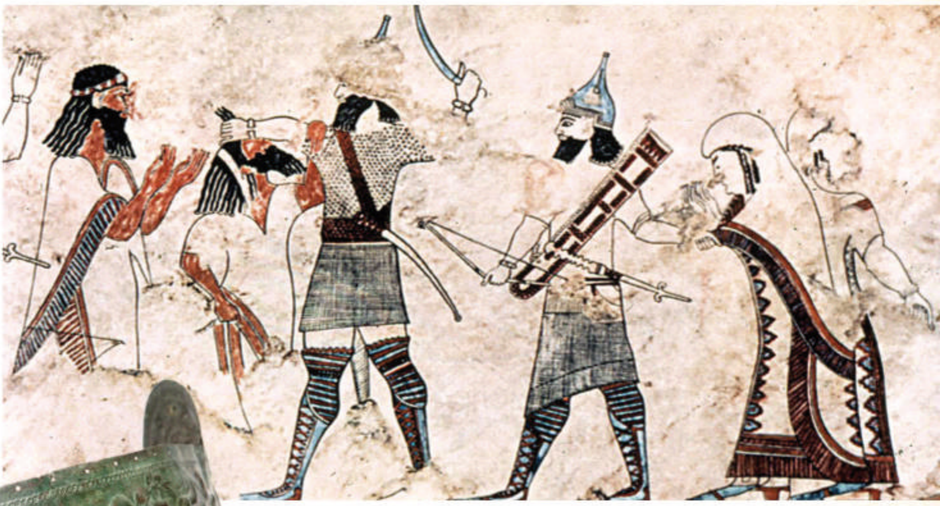
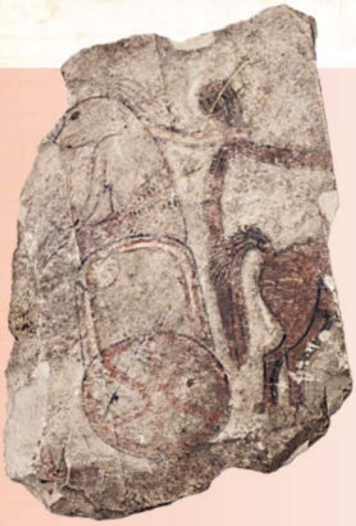




Assyrian ceremonial bronze belt decorated with warriors, horsemen, and men in chariots, 850-650 BC.
© Detroit Institute of the Arts



New Kingdom ostracon, with a painting of a mouse riding a chariot drawn by two horses.
© Världskulturmuseet

The angels of Ptah

While the Assyrian army seems to have been unstoppable, with its huge numbers and vast supporting industry, there are accounts of its defeat. One such defeat occured during a campaign waged by the Assyrian king Sennacherib (r. 705-681 BC) against an otherwise unknown Pharaoh Sethos, priest of Hephaestus, usually identified with the Egyptian god Ptah. No contemporary source mentions a pharaoh of this name, nor is there an obvious match for this campaign. Sennacherib's son Esarhaddon unsuccesfully campaigned against Egypt in 674 BC. This campaign, one of Assyria's worst defeats, may be the best candidate for a match.

According to Herodotus, Sethos "neglected the warrior class of the Egyptians" and "treated them with contempt, as if he had been unlikely to need their services". When the invasion came, the army was unwilling to fight. The pharaoh entered the temple (of Ptah) and "complained bitterly of the peril which threatened him". Sethos fell asleep in the temple and dreamt that the god told him not to lose heart and that he should march against the enemy; the god would send helpers. Sethos woke and marched against the invaders with only a small militia army consisting of "shopkeepers, artisans, and market-people". He marched to Pelusium (30 km southeast of the modern Port Said, Egypt), and took up position there. Facing the overwhelming odds, says Herodotus, "thousands of field-mice swarmed over the Assyrians during the night, and ate their quivers, their bowstrings, and the leather handles of their shields, so that on the following day, having no arms to fight with, they abandoned their position and suffered severe losses during their retreat". This was the army of Ptah.

Recent mouse plagues have, indeed, demonstrated that mice will eat anything organic. Although there is no record of a campaign by Sennacherib against Egypt, 2 Kings 19:35 includes the annihilation of 185,000 Assyrians in their camp by the angel of the Lord. Perhaps the mice were in fact the angels of Ptah.

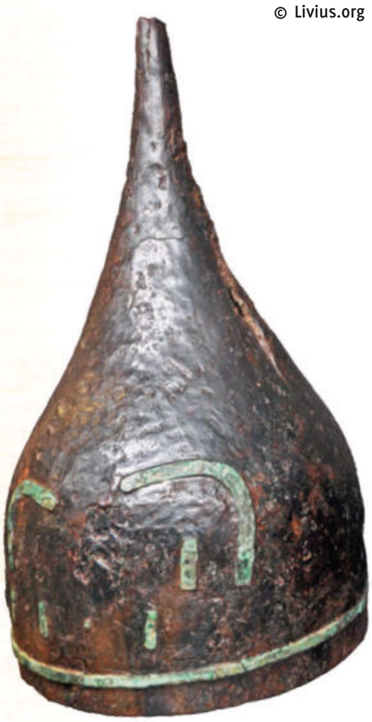
some minor changes during the three centuries of the Neo-Assyrian period. In the ninth and early eighth centuries BC, the decoration of the pointed bronze helmets was partly functional: parallel embossed ribs around the rim of the helmets provided additional strength for the bronze. These were paired with arcs bending inwards and ending in animal's heads providing a frame for the incised figurative decoration showing the king, the trees of life, genies, or marching officials. From the second half of the eighth century, with the advent of iron helmets, the strengthening function of the embossed ribs of the bronze helmets became superfluous. The ribs, and the complete decoration of the earlier tradition was now imitated or rendered in bronze inlay. The frontal decoration of the helmets showed a scene with the king and / or Assyrian deities. This design attached a soldier wearing such a decorated helmet to a certain deity, under the *aegis* of which the given unit marched.

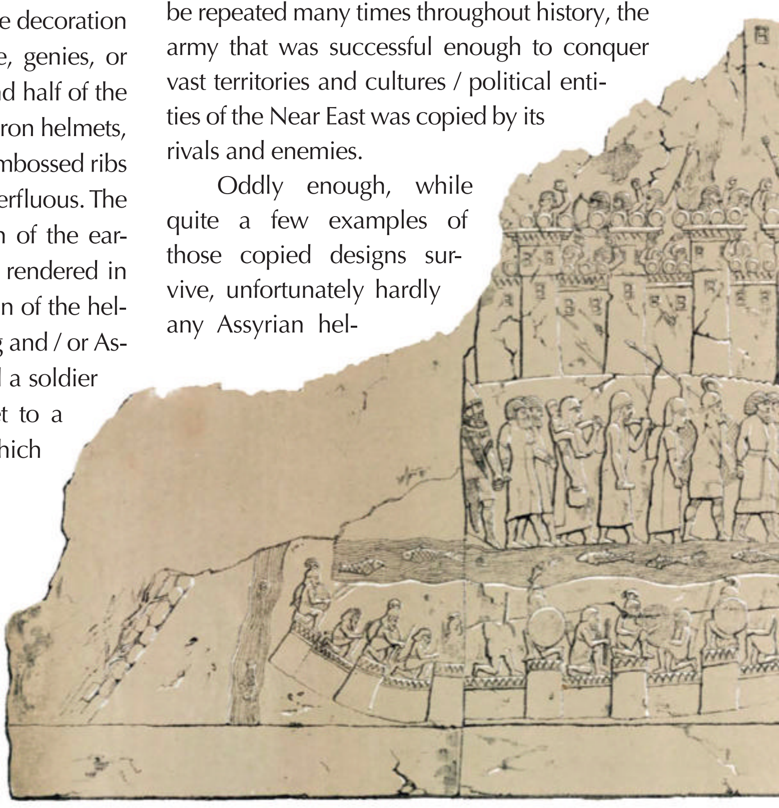
Spread and survival

It has to be noted that the Assyrian weapons industry influenced the weapons industries of the neighbouring conquered or enemy regions of the Near East. Thus, the same helmet type is known from Northwest-Iran, Urartu, North-Syria including Cyprus. They even influenced the Eastern-Mediterranean / Greek helmet traditions of the Geometric and Orientalizing Periods through a kind of functional and technological transfer. In a development that would be repeated many times throughout history, the army that was successful enough to conquer vast territories and cultures / political entities of the Near East was copied by its rivals and enemies.

Oddly enough, while quite a few examples of those copied designs survive, unfortunately hardly any Assyrian hel-

Wrought iron helmet from Amlash, Gilan Province, Iran, ca. 800-601 BC, now in the Royal Museums of Art and History, Brussels, Belgium.
© Livius.org





Bronze helmet crest; one of the fittings on Assyrian helmets (though initially not worn by ethnic Assyrians).
© Livius.org

mets are known from the archaeological record. There is only a single pointed helmet made of iron and decorated with bronze inlay (British Museum, BM 22496); there are a further 16 helmet fragments made of iron and decorated with bronze inlay (BM 48-11-4, 113-115) probably from the Northwest Palace, Chamber I at Nimrud; and a bronze crest piece of a crested helmet found at Lachish.

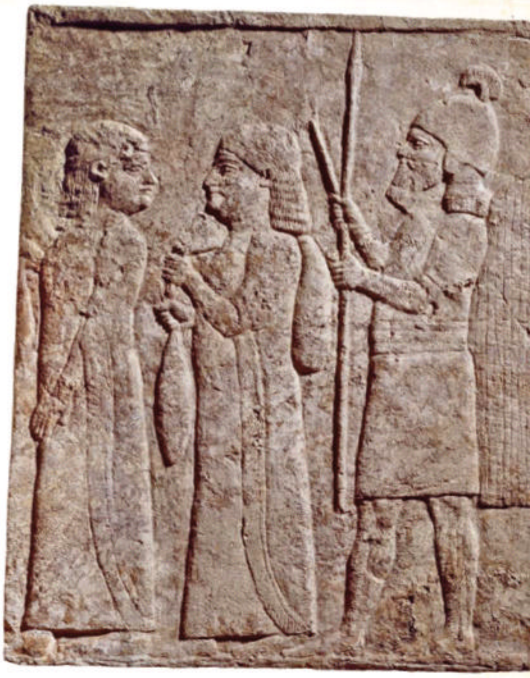
It is known from some excavation records, however, that Assyrian bronze and iron helmets were indeed found in the nineteenth century excavations. Layard records (1849: I: 341-342) that:

> *"As the earth was removed, other portions of armour were found; some of copper, others of iron, and others of iron inlaid with copper. At length a perfect helmet (resembling in shape and in the ornaments the pointed helmet represented in the bas-reliefs) was discovered. When first separated from the earth it was perfect, but immediately fell to pieces. I carefully collected and preserved the fragments, which were sent to England. The lines, which are seen round the lower part of the pointed helmets in the sculptures, are thin strips of copper, inlaid in the iron. Several helmets of other shapes, some with the arched crest, were also uncovered; but they fell to pieces as soon as exposed; and I was able, with the greatest care, to gather up a few of the fragments which still held together; for the iron was in so complete a state of decomposition that it crumbled away on being touched. Portions of armour in copper, and embossed, were also found, with small holes for nails round the edges."*

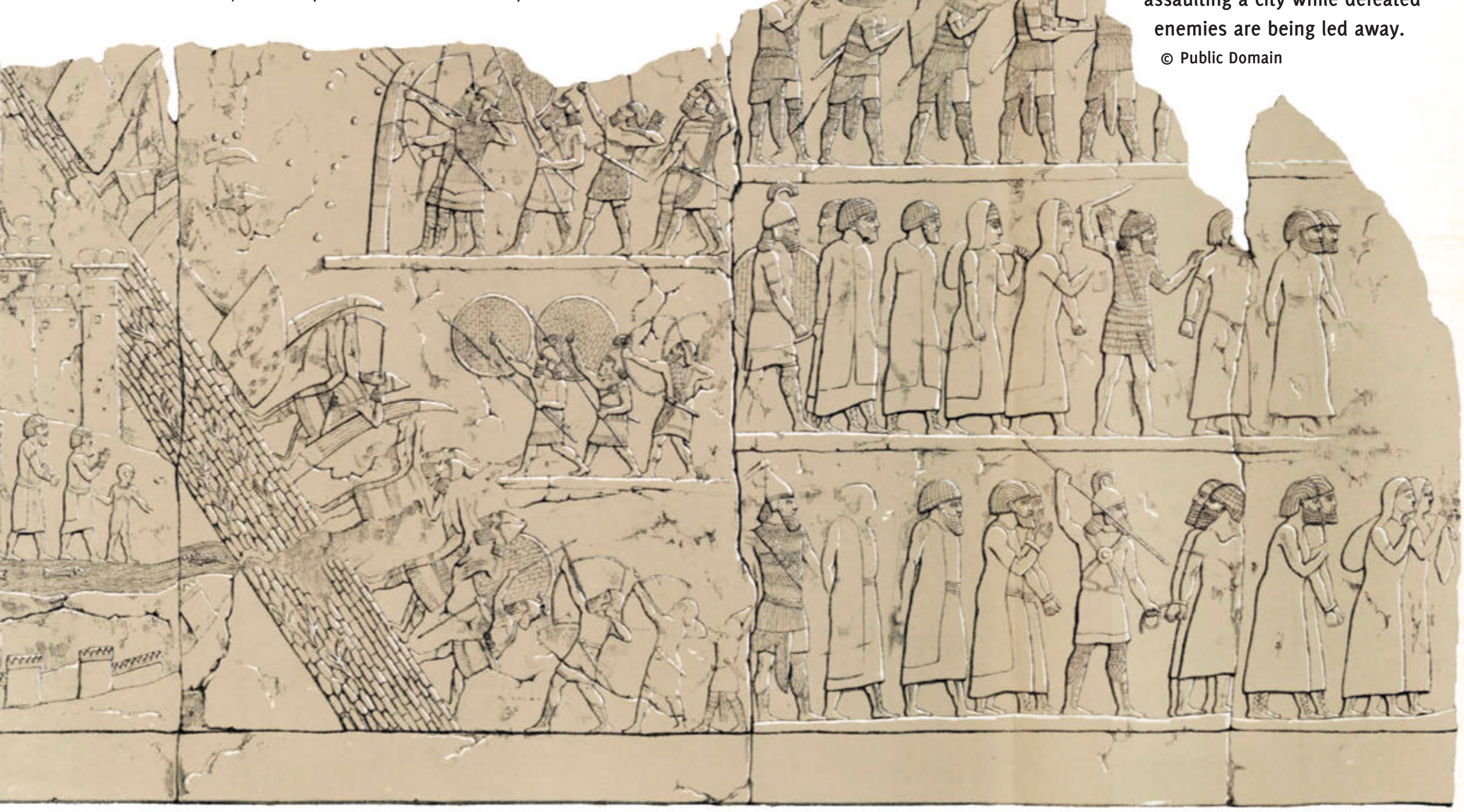
Victor Place also recorded that during the excavations in rooms 16 and 17 of the palace of Sargon II at Khorsabad, he found several pointed bronze helmets flattened by the earth. Unfortunately not a single fragment survives of these helmets.

A few, unfortunately unprovenenced, helmets of both the conical and crested types, made of both bronze and iron, and which can be identified as Assyrian helmets are also known. These pieces reached private collections and museums through the art market. In another case of the random nature of survival, few of the actual military artifacts made by the first real empire in the Ancient Near East have come down to us, but their representations on the reliefs help create a picture of the army that used them.

Tamás Dezső is an Assyriologist and archaeologist at Eötvös Loránd University, Budapest.



Assyrian relief depicting a warrior wearing a crested helmet, who has taken two women captive. The shape of the soldier's large shield indicates that this relief was made during the reign of Ashurbanipal (668-626 BC).
© Rijksmuseum van Oudheden



Assyrian relief with various warriors in both conical and crested helmets assaulting a city while defeated enemies are being led away.
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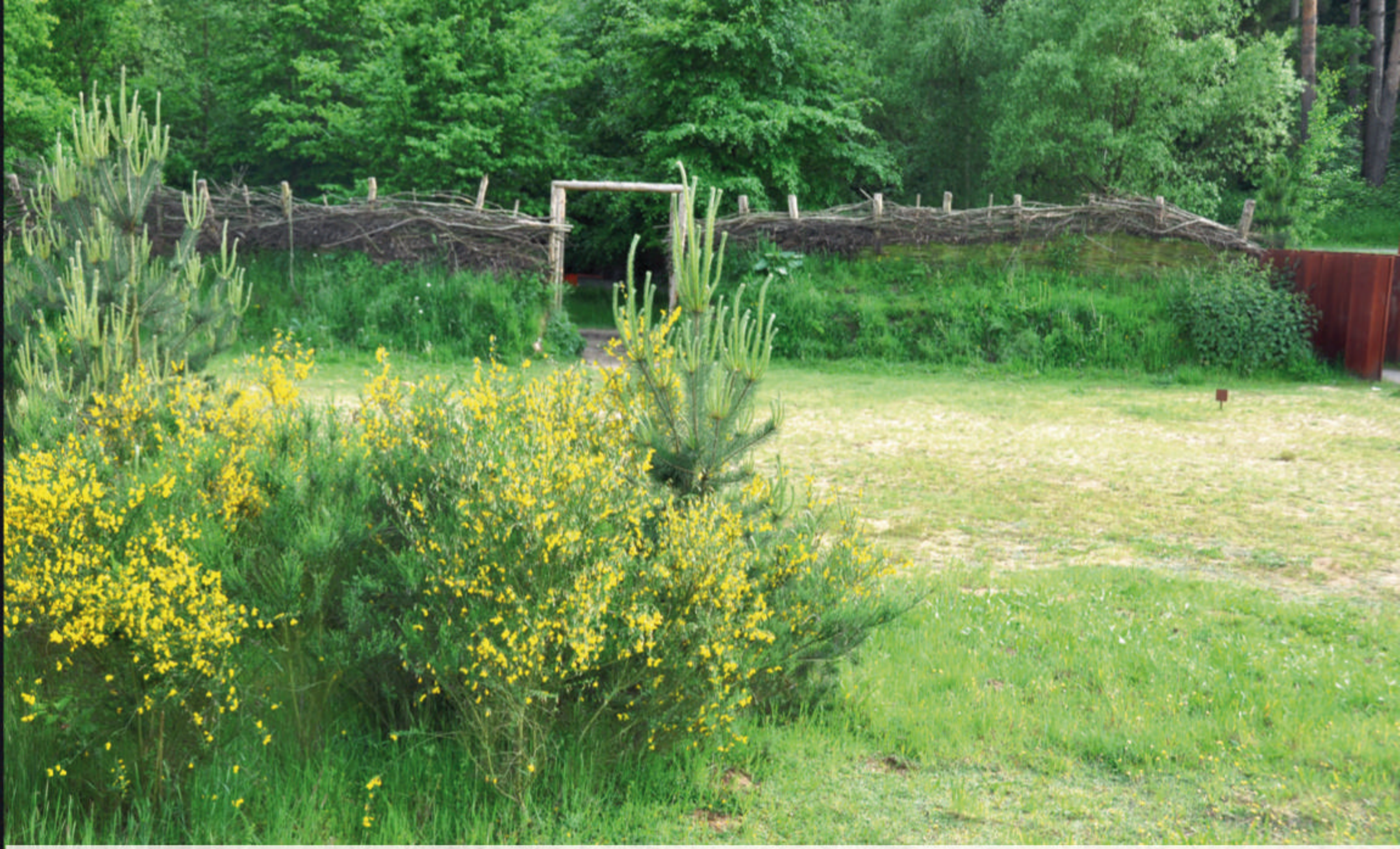


Excavations provided evidence for a wall skirting the Kalkrieser Berg, south of the Great Moor, creating a narrow corridor for the Roman column.

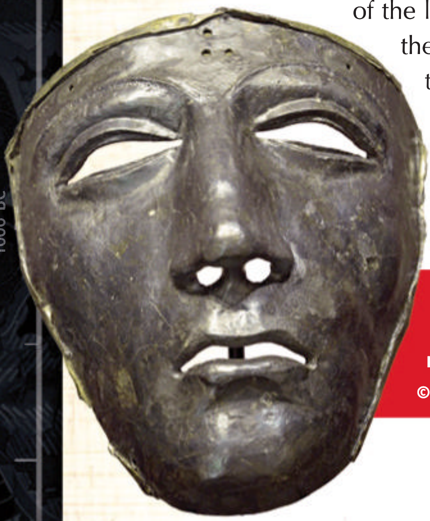
LOSING YOUR HEAD IN A FOREIGN MARSH

A MASK FOR A BATTLE

By Murray Dahm

The location were the now infamous Varian Disaster most probably took place is in the Teutoburg Forest near modern-day Kalkriese (east of modern Osnabrück, Germany). One of the lynchpins for identifying the site as Kalkriese is a now very famous cavalry helmet lost, or discarded, during the fighting.

Varus' invasion was nothing new. Augustus had been pressing the Germanic frontier forward since at least 12 BC. In 16 BC, a combination of three Germanic tribes had crossed the Rhine and defeated the consul Marcus Lollius, even capturing the eagle of one of the legions (Velleius Paterculus, 2.97.1). They then retreated back over the Rhine before they could be defeated. Nero Claudius Drusus began campaigning in Germania in 12 BC and won a series of victories, although his achievements were halted by his accidental death in 9 BC. Drusus' brother, Tiberius (the future emperor), took over and continued campaigning until 6 BC. He declared Germania was pacified, and in 7 BC Germania was made into a Roman province (Germania or Germania Magna). Lucius Domitius Ahenobarbus (grandfather of the future emperor Nero) advanced the frontier to the Elbe River before the end of the century. In AD 6, a huge army of thirteen legions was led against the Marcomanni, but the Illyrian Revolt in AD 9 focused Roman attention on the Balkans.



This cavalry facemask was found at the base of the turf wall at Kalkriese, suggesting a Roman cavalryman lost his helmet (and head?).
© Museum und Park Kalkriese

In the same year, Varus (who had been consul in 13 BC and a close colleague of Tiberius) was placed in command of three legions (*legiones XVII*, *XVIII*, and *XIX*). Varus had been a governor and commander in Africa, Syria, and Judea, and he was made governor of Germania in AD 7. Based at Vetera (modern Xanten, Germany) on the west bank of the Rhine, Varus was informed of a revolt fomenting beyond the Rhine by Arminius – a loyal Roman ally and commander of the Cherusci tribe who had participated in supressing the Illyrian Revolt. Varus marched his legions into *Germania Magna* at the start of the campaign season of AD 9 and spent the summer around

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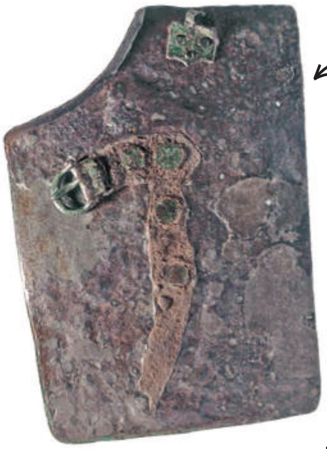
Lead sling bullets were among the earliest finds at Kalkriese to identify the site with Varus

© Karwansaray Publishers

a base on the Weser, near modern Minden (Germany). Arminius used the summer months to prepare his attack on the march back to Xanten, for he was the one fomenting the revolt he had warned Varus about.

As the Roman column snaked through forested terrain with hills and swamps, Arminius launched his attack. The Cherusci and their allies appear to have taken time to prepare the ground– even erecting a zigzagging turf wall from which they could attack the Romans and defend themselves from Roman counterattacks in turn. The Roman army attempted to defend itself but disintegrated, spread out as it was in a marching column. Modern excavations span a corridor of almost 24 km in length. The battle devolved into a series of running engagements which took place over three days.



A segmentata plate from the site with the leather strap and buckle still preserved and attached.

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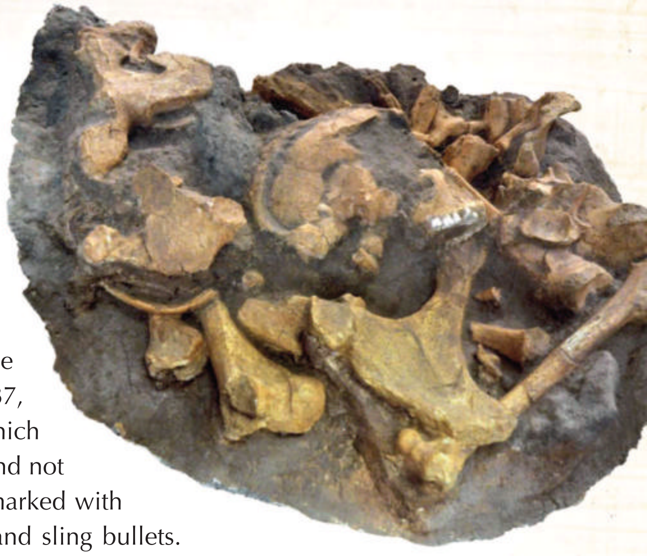
The historian Velleius Paterculus, who had been a cavalry prefect with Tiberius in Germania, spoke with the few survivors of the disaster and calls it the heaviest calamity to have befallen the Roman army since the defeat of Crassus at Carrhae in 53 BC. "Hemmed in by forests and marshes and ambuscades", the Roman army was "exterminated almost to a man by the very enemy whom it had always slaughtered like cattle" (2.119.2). Varus himself, when he realized the scale of the disaster, fell on his sword, but his men fought on. Velleius Paterculus recorded that Vala Numonius, a cavalry commander, abandoned the infantry and, with his cavalry *turma*, made a break for escape – attempting to reach the safety of the Rhine. "But fortune avenged his act, for he did not survive those whom he had abandoned, but died in the act of deserting them" (2.119.4).

Several sites for the battle were suggested in the nineteenth century – including Detmold, the area around the Wiehen and Weser Hills, the territory around modern Beckum, and a southern site in the Westphalian Lowland. The great Roman historian Theodor Mommsen favoured a site at Kalkriese. When modern excavations at Kalkriese began in earnest in 1987, finds included coins which dated to Augustus' reign and not later (some were countermarked with *VAR*, representing Varus) and sling bullets. Debate about the identification of Kalkriese as the site of Varus' final defeat never ended, but that the Roman army fought Germanic tribesmen there is obvious.

Since then, finds have continued to be made (over 7000 of them). The site also rendered up the most complete suit of the so-called *lorica segmentata* in 2018. One of the most spectacular finds was made near the remains of the turf wall – the face mask of a Roman cavalry helmet. Was this perhaps lost in desperate fighting as the cavalry under Numonius attempted to make a break for freedom abandoning the legions to their fate?

You can explore the Varian disaster in the *Ancient Warfare Special Issue: The Varian Disaster*. AW

Murray Dahm is the assistant editor of* Ancient Warfare *magazine.



Human bones from the site at Kalkriese are testament to the fighting between Roman legionaries and Germanic tribesmen.

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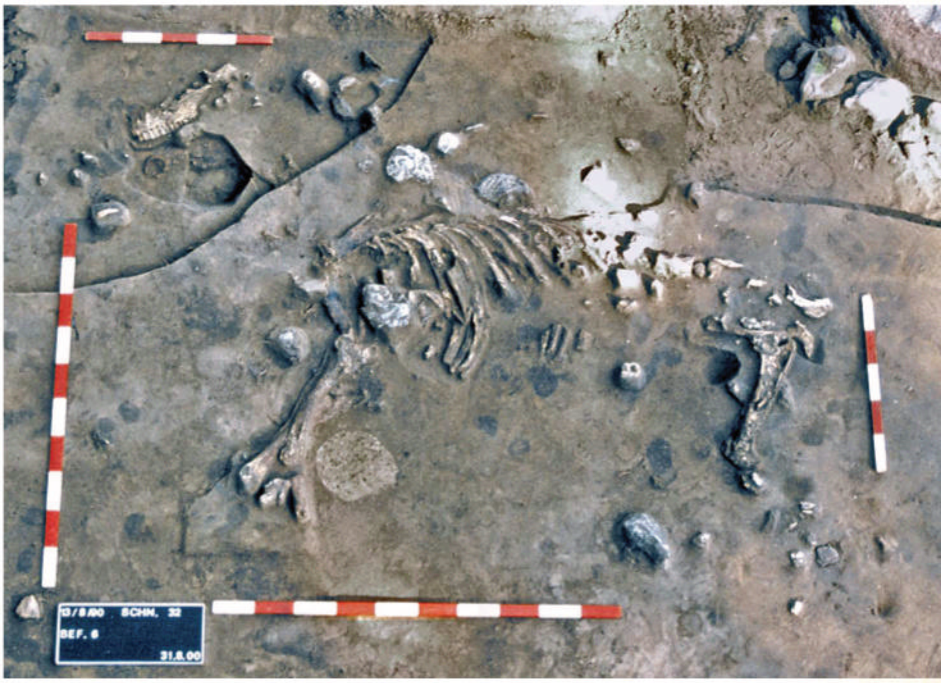

The remains of a mule at Kalkriese, perhaps suggesting a Roman beast of burden in Varus' column caught in the fighting.

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A collection of Germanic spear and javelin points found at Kalkriese.

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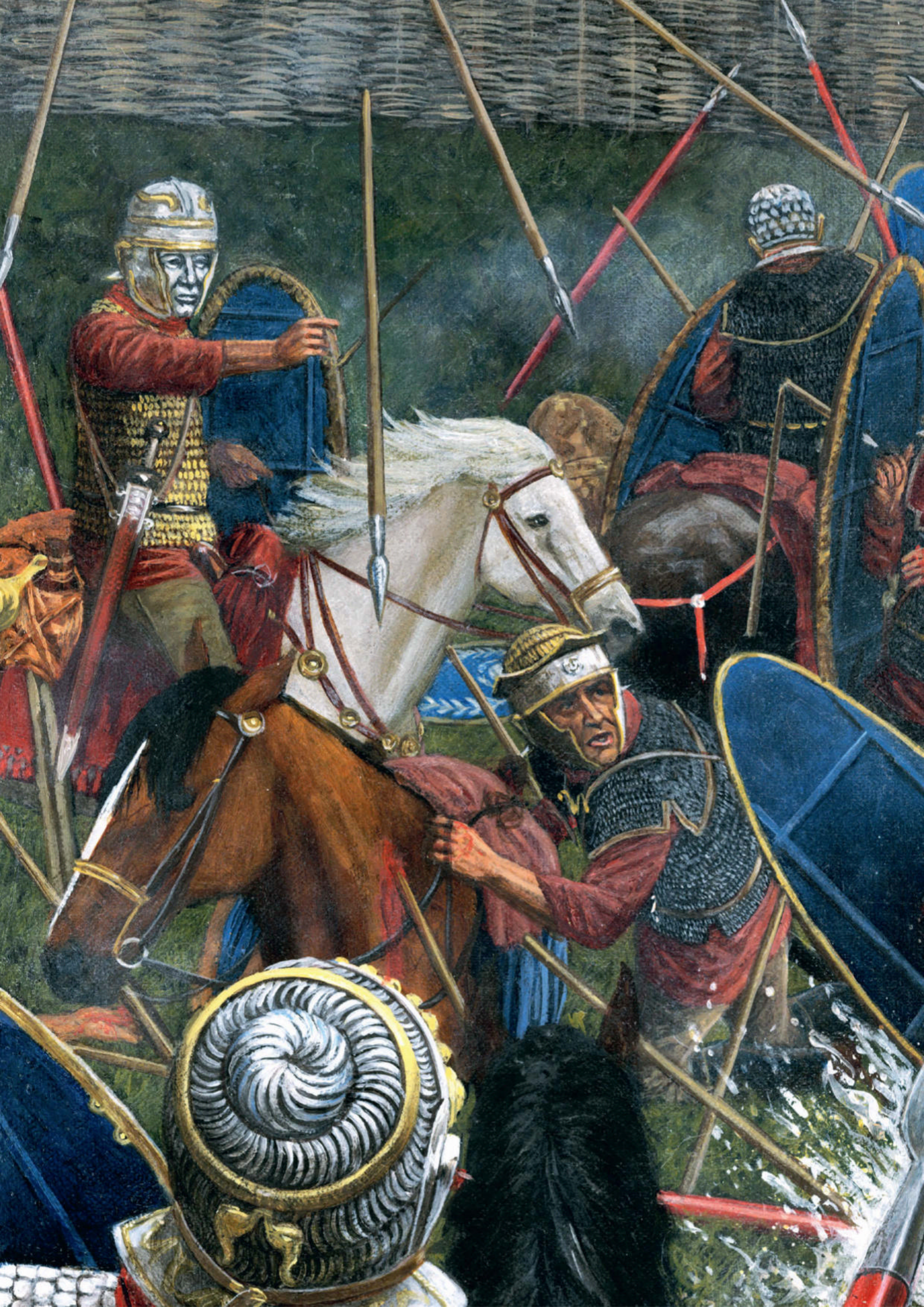
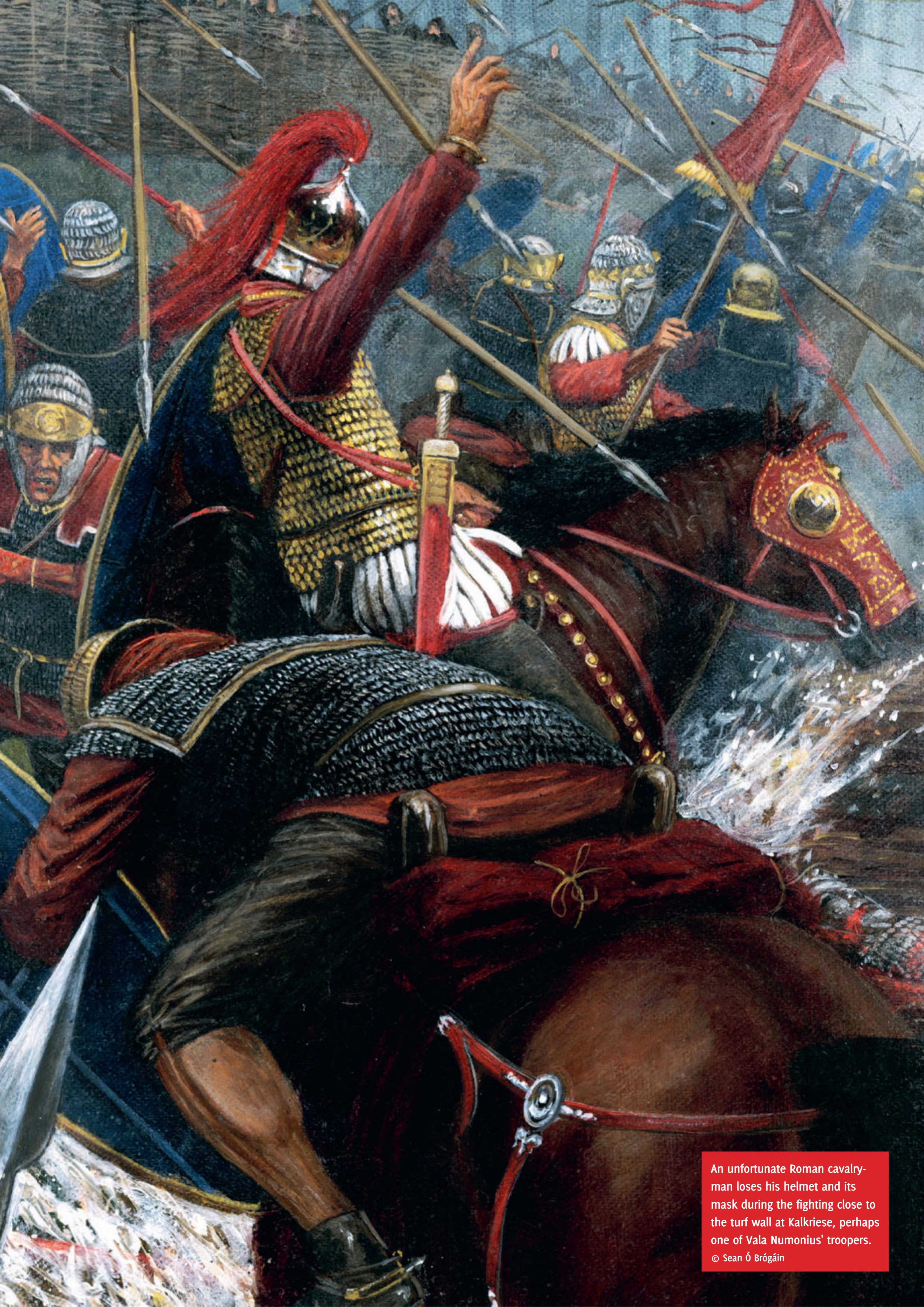
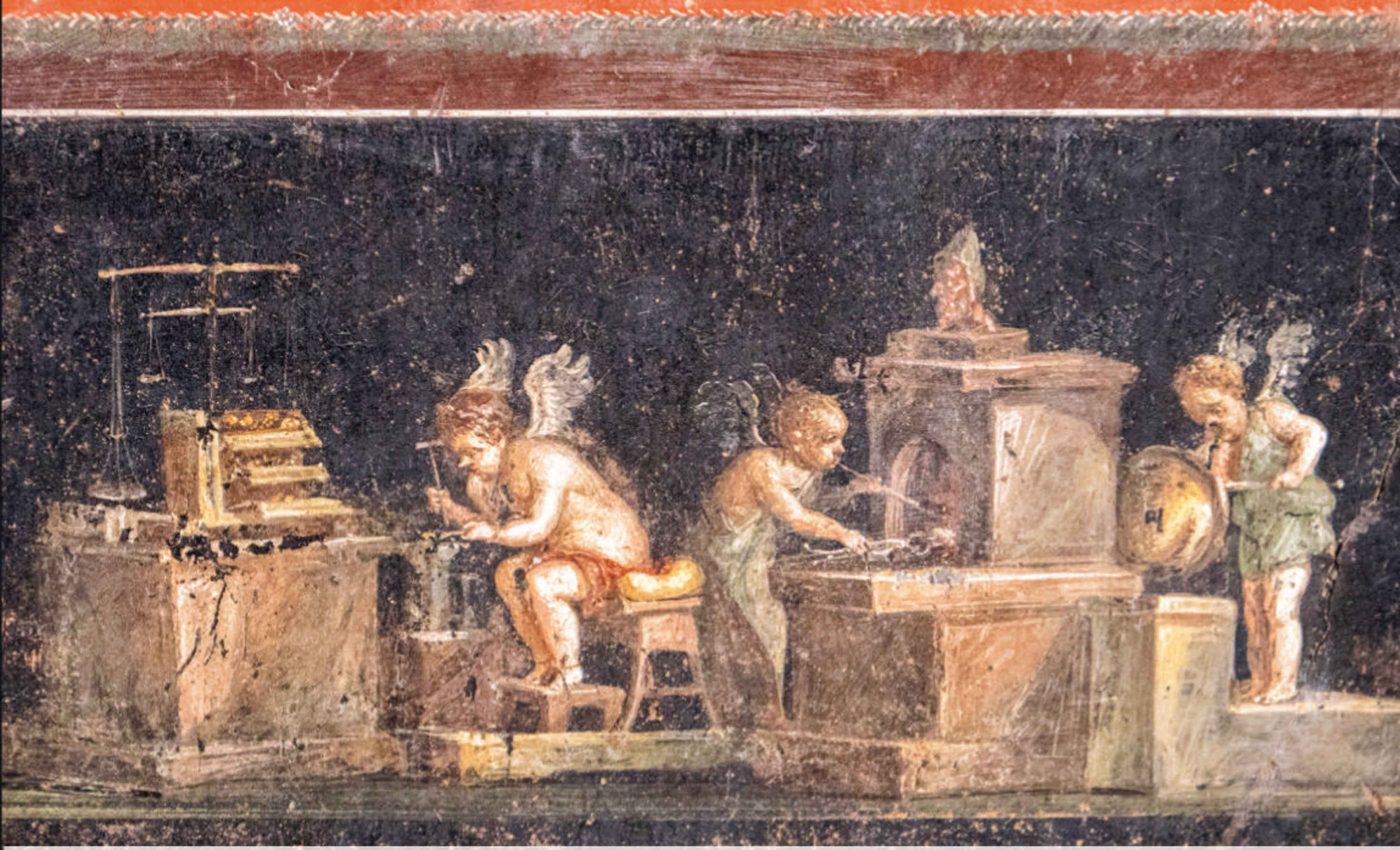




An unfortunate Roman cavalryman loses his helmet and its mask during the fighting close to the turf wall at Kalkriese, perhaps one of Vala Numonius' troopers.

© Sean Ó Brógáin



Detail of a fresco from the House of the Vettii in Pompeii, with Cupids working and casting metal. In this case, they are preparing gold.

ROMAN HELMET PRODUCTION

HAMMERING IT HOME

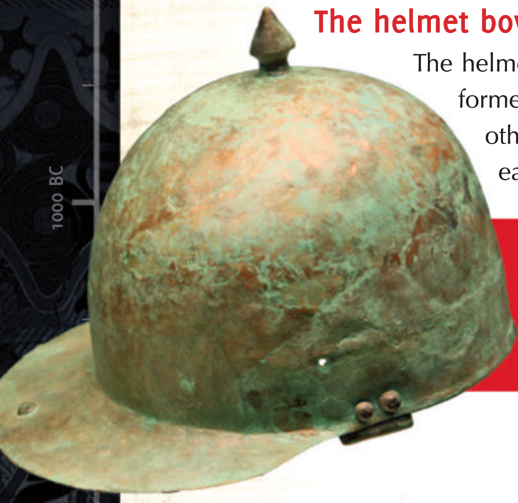
By Dr David Sim

During the first and second centuries AD, the standard infantry helmet consisted of a helmet bowl, with cheek pieces and a brow protector. Other elements such as ear protectors, crests, finials, plume holders, and carrying handles were applied according to the form of helmet, and the requirements of the time.

The helmet was one of the most important pieces of kit a Roman soldier had. As such, a great deal of work went into ensuring that each piece of the helmet, from the bowl to the ear guards, was made to a high standard. The blacksmiths creating these were extremely skilled craftsmen.

The helmet bowl

The helmet bowl and its associated neck guard formed the foundation of the helmet; all the other furniture was attached to this. The earliest helmets were of copper alloy construction and were raised. That is to say, a sheet of metal was formed over a solid object by repeated cycles of annealing and hammering. The added advantage of this process is that it hardens the alloy, and there is evidence that even before the Roman period, helmet makers were aware of this.



Coolus-Hagenau type helmet: its bowl was raised from bronze by repeated annealing and hammering which made for a strong helmet, but of uneven thickness.
© Slick / Wikimedia Commons

The starting point for an iron helmet bowl was a billet of iron (see Figure 2: A). This was forged down into a rough square with parallel surfaces (see Figure 2: B). A system of rollers was probably used to produce a sheet with flat sides and of uniform thickness (see Figure 2: C). A template would have been used to draw the outline of the development on this sheet (see Figure 2: D). This was then cut to shape, probably using sheers. The bowl could then be formed either by raising, using a doming block, or spinning.

The apex of a helmet bowl (indeed, any hemispherical shape) has complex mechanical properties. If the helmet has been formed by raising then the metal in the apex of the bowl will be thinner than the metal at the rim, because it has been stretched the most. The example shown in Figure 3 (left) is from a mid-first century AD copper-alloy Coolus helmet

© Cristina Morettini 95 / Wikimedia Commons

DID YOU KNOW?

In contrast to a raised helmet bowl, a spun bowl is created by spinning a pre-sized metal disc at high speed, while pushing it over the forming block. In this way, the thickness is consistent and no metal is displaced.

recovered from the River Thames, in London. In this example, the metal at the apex of the bowl is half the thickness of the material nearer the rim. The example shown in Figure 3 (right) is from a spun copper-alloy Coolus from Chichester Harbour, West Sussex, UK, also from the mid-first century AD. As would be expected, the thickness of the sheet metal is consistent at the crown and the rim. Thinning can be caused if the spinning is carried out without due care and attention – in the example shown, the minor variations could also be due to corrosion after deposition.

The thinning of the metal caused during raising does reduce the defensive index of the helmet; however, the thinning is partially compensated for, because work hardening takes place during the raising process.

Furthermore, the hemispherical shape of the crown also confers additional strength.

Etruscan carnelian scarab, fourth century BC, depicting, presumably, Hephaestus at his work.

© J.Paul Getty Museum

It seems likely that the spinning produced a true hemisphere and that the elliptical form was produced by cold hammering. This hammering gave rise to the variations in thickness around the rim (see Figure 4). The elliptical form was produced during the raising process and the majority of the hammering was away from the rim, which is why the dimensional variation at the rim is so small.

Evidence of working is usually gained from a study of the inside of the helmet. The inside was usually left rough, because it was common practice during the Roman period not to remove any of the tool marks from the inside of the bowl. This would have helped to hold any unattached lining in place. If the lining was attached using glue these tool marks would provide an excellent key. In contrast, the outsides of the helmets appear to have had all traces of any manufacturing process removed. It seems that the Romans were well aware that removing tool marks from the insides of helmets served no practical purpose whatsoever, but the outsides had to show a high quality of workmanship.

Bronze mounting plate of a Roman helmet in the shape of an eyebrow, second half of the first century AD.

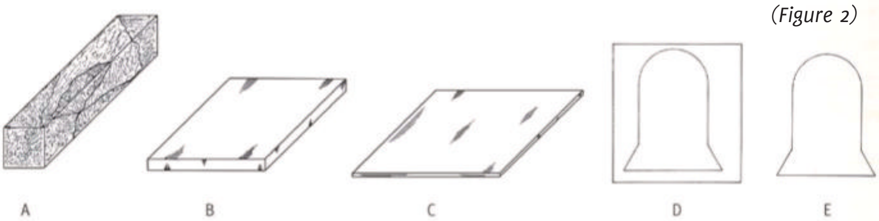
© Rijksmuseum van Oudheden

The neck guard

Joints were an area of weakness widely avoided in Roman helmet manufacture by producing helmet bowls and neck guards that were formed from the same sheet of metal. The forming of the neck guard at around 90 degrees to the body of the helmet adds significant strength to that area (he same effect as corrugations in iron sheet). From Figure 3 it can be seen that

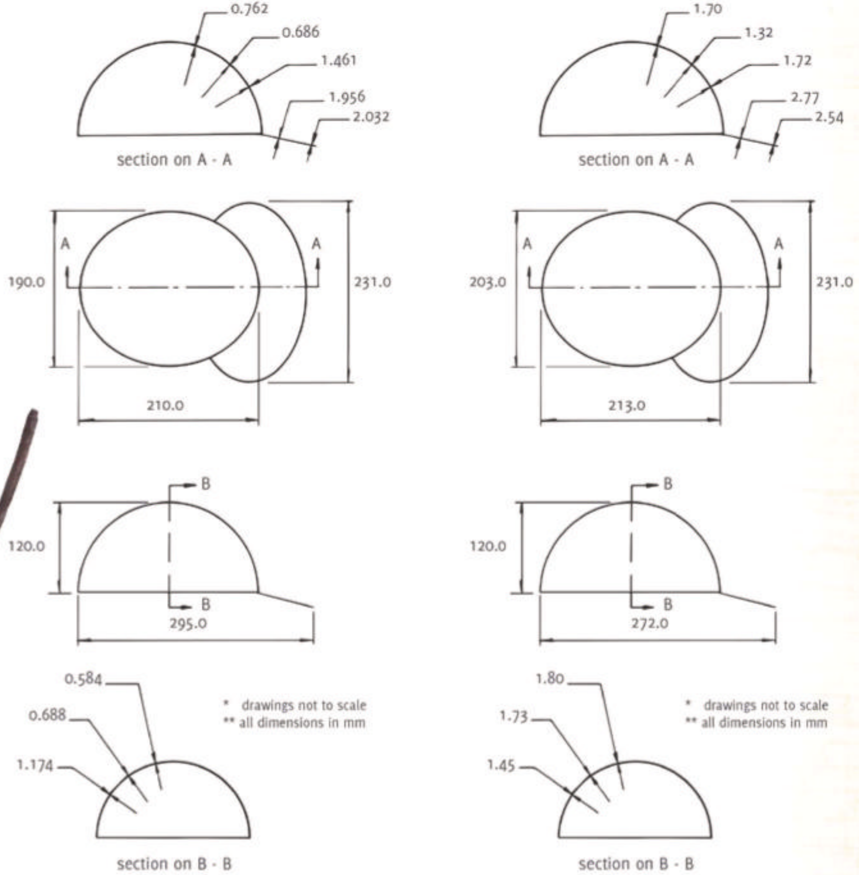
THE PRODUCTION SEQUENCE FOR THE MANUFACTURE OF A HELMET 'DEVELOPMENT'

(Figure 2)

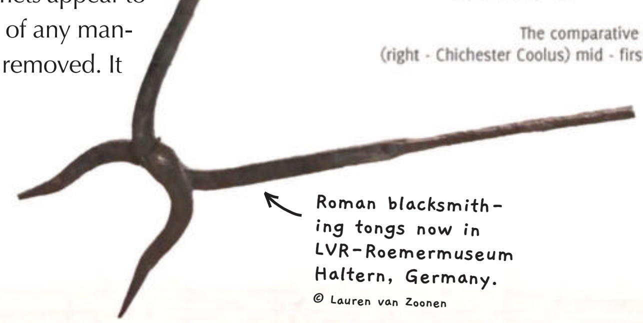


THE FORMATION OF HELMET BOWLS

(Figure 3)



The comparative dimensions of a raised (left - Thomas Coolus) and spun (right - Chichester Coolus) mid - first century A.D. copper alloy Coolus helmets, highlighting the thinning of the metal at the apex of the raised bowl.

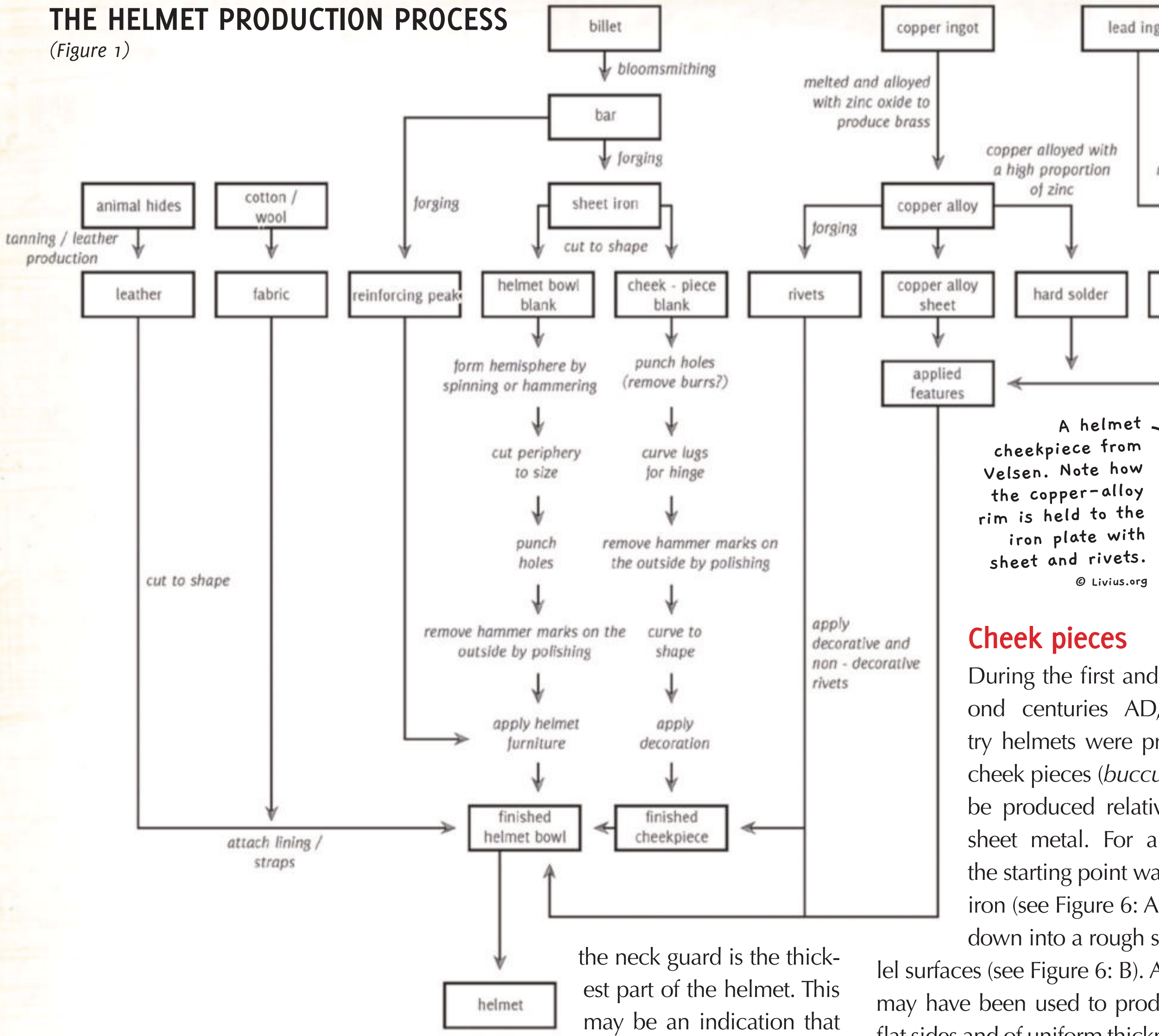


Roman blacksmithing tongs now in LVR-Roemermuseum Haltern, Germany.

© Lauren van Zoonen

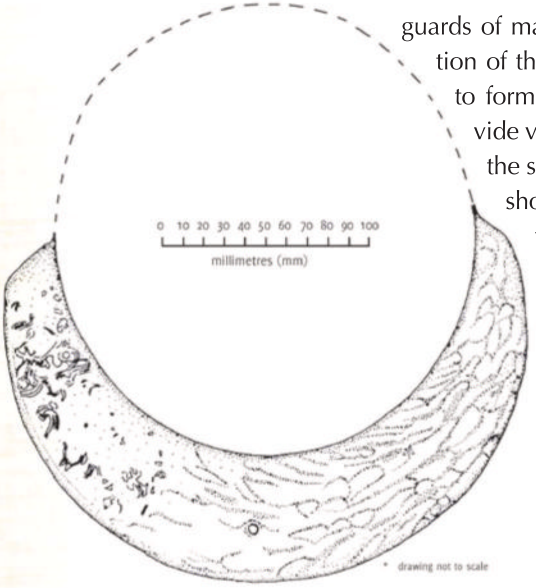
THE HELMET PRODUCTION PROCESS

(Figure 1)


billet
bloomsmithing
bar
forging
sheet iron
cut to shape
forging
animal hides
cotton / wool
tanning / leather production
leather
fabric
reinforcing peak
helmet bowl blank
cheek - piece blank
form hemisphere by spinning or hammering
punch holes (remove burrs?)
cut periphery to size
curve lugs for hinge
punch holes
remove hammer marks on the outside by polishing
remove hammer marks on the outside by polishing
curve to shape
apply helmet furniture
apply decoration
cut to shape
finished helmet bowl
finished cheekpiece
attach lining / straps
helmet
copper ingot
melted and alloyed with zinc oxide to produce brass
lead ingot
tin ingot
copper alloyed with a high proportion of zinc
melted to form soft solder
copper alloy
forging
rivets
copper alloy sheet
hard solder
soft solder
applied features
apply decorative and non - decorative rivets

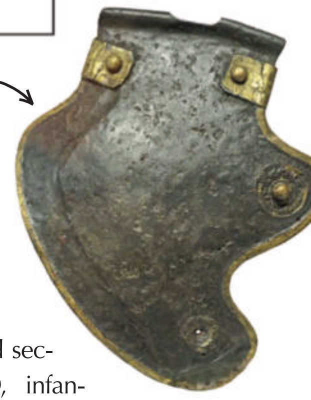
the neck guard is the thickest part of the helmet. This may be an indication that very little work was carried out on it after the initial forming of the bowl.

Tool marks on the underside of neck guards of many helmets provide an indication of the types of tools that were used to form the neck guard and they provide valuable information concerning the sequence of operations. Figure 5 shows the remnant tool marks from the underside of the Bosham Harbour Coolus. The elongated cross pein hammer marks on the inside curve were probably produced when the neck guard was bent out from the original form. The larger marks show that work was carried out in this area to remove any ripples caused during the bending operation. This also had the effect of work-hardening it.


0 10 20 30 40 50 60 70 80 90 100
millimetres (mm)
* drawing not to scale

PRODUCTION HAMMER MARKS ON THE UNDERSIDE OF A NECK GUARD ON A CHICHESTER HARBOUR COOLUS

(Figure 5)



A helmet cheekpiece from Velsen. Note how the copper-alloy rim is held to the iron plate with sheet and rivets.

© Livius.org

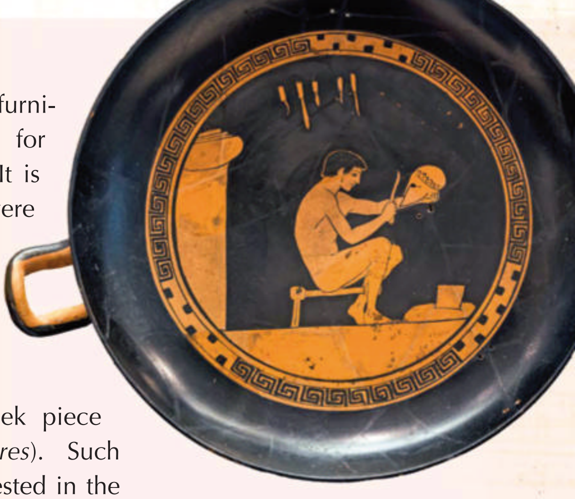
Cheek pieces

During the first and second centuries AD, infantry helmets were provided with cheek pieces (*bucculae*). These could be produced relatively simply from sheet metal. For an iron example, the starting point was again a billet of iron (see Figure 6: A). This was forged down into a rough square with parallel surfaces (see Figure 6: B). A system of rollers may have been used to produce a sheet with flat sides and of uniform thickness (see Figure 6: C). A template would have been used to draw the outline of the cheek piece on this sheet (see Figure 6: D). This was then cut to shape, possibly using sheers or chisels. The top edge was rolled to form the barrels for the hinge. It was then curved to follow the contours of a cheek, and any decorative features were then added. Finally, it was attached to the body of the helmet. A strip of metal was bent to form a tube called a *chenier*. This was then riveted, or less frequently, soldered to the helmet bowl.

Some cheek pieces were adorned with decorative rivets. For ease of manufacture, these could have been mounted before the cheek-piece was fitted to the helmet. The pair of second century cheek pieces shown in Figure 7 reveal evidence for mineralized leather around the rivets. This highlights that in some cases decorative rivets were punched through the linings. Furthermore, the cross-hatched scoring of the interior surface, just visible on both pieces, would have provided a key for

Specialist craftsmen

Due to the variety of helmet furniture, the production process for a helmet could be complex. It is probable that the processes were divided up between specialist craftsmen. For example, the late second century *De Rei Militari* by Tarruntenus Paternus provides a list of military craftsmen including cheek piece makers (*buccularum structores*). Such craft specialization is well attested in the ancient world; there is evidence for specialist Greek helmet makers, for example, such as in Aristophanes' *Peace* (1250ff.). The production sequences shown in Figure 1 give an indication of the basic operations required to produce the various components of a military helmet.



Attic red-figure kylix, ca. 480 BC, with a young artisan making a Corinthian helmet, with anvil, furnace, and other tools on the wall behind him.

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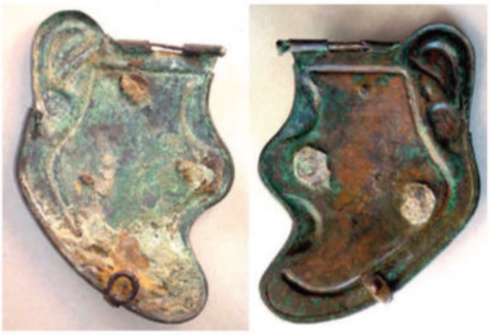

Fig. 7: Cheekpiece with mineralized leather fragments.

© Dr. David Sim

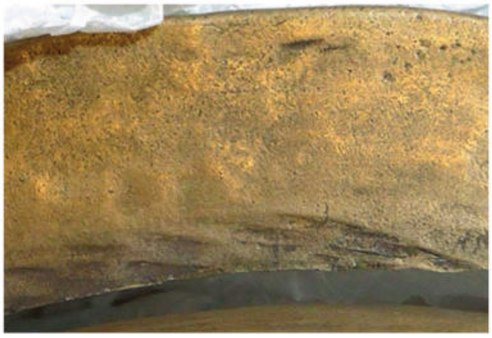

Fig. 8: Cross pein hammer marks on a brow guard.

© Dr. David Sim

the glue and would have further secured the lining. This provides a guide to the probable sequence of operations for the manufacture of this cheek piece. In this example, after the cheek piece was made, its inside surfaces would have been scored, glue applied, and a leather lining attached. When this was dry, a hole would be punched in the cheek piece and the rivet passed through the cheek piece and the leather lining before being hammered over to secure the rivet to both the cheek piece and the lining. As can be seen in Figure 7, rings were attached to the the cheek piece. The cheek pieces were tied together by passing leather thongs or cord through them and securing under the chin.

Finally, the cheek piece could be attached to the helmet bowl. A joint pin, which was usually a piece of wire, could be inserted through the hinge (the *chenier*), thereby linking the cheek piece helmet. In use, the cheek pieces hung vertically down from the bowl; these could then be tied together under the chin.

Brow guard

Like the cheek pieces, the brow guard was universally provided on infantry helmets during the first and second centuries. The production of brow guards relied on simple forge work. Their production started with a billet of iron or non-ferrous metal, which was forged into a regular rectangular strip. Lugs were formed on each end and holes punched through the centre of the lugs. The strip was then bent into a curve, following the contour of the front of the helmet. Finally, it was attached to the helmet with rivets.

The properties of iron and copper alloy are different. This means that production of the brow guard has to be carried out in a manner specific to the properties of the metal. For example, it is possible to carry out considerably more cold work on copper alloy than on iron. When copper alloy has been work hardened so that it can no longer be formed, it can be annealed readily by heating and quenching in cold water, returning it to its softest possible condition. It can then be worked further. Iron however, when it has become work-hardened, requires a lengthy annealing process taking several hours to remove the work-hardening.

As with many examples of armour, the working marks were often left on the inner and undersides (see Figure 8). In this example, there are two distinct types of hammer mark. At the top of the picture shallow indentations made by the striking end of the hammer at the bottom of the picture elongated grooves pro-

Bronze Roman brow guard, probably from a Hagenau or Weisenau type helmet, ca. AD 10–120.

© Tyne and Wear Museums

Marble stele of a soldier named Ares, who dedicated his arms and armour to the god Ares when he finished his military service, from Alexandria ca. AD 190.

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Bronze helmet carrying handles (both drop-handle and swan-necked), ca. AD 100-300.
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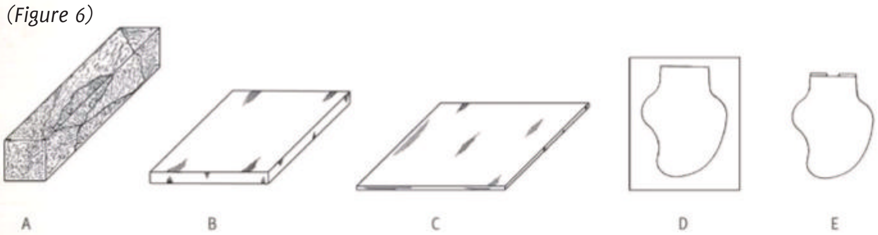
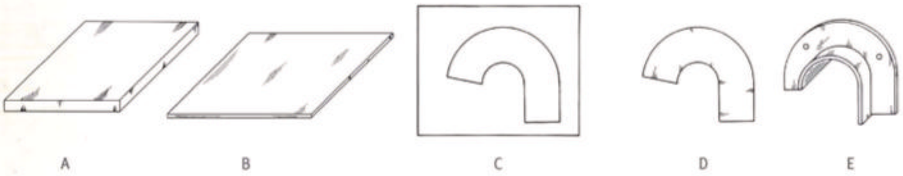
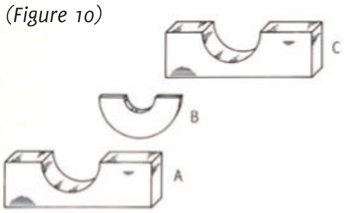
THE PRODUCTION SEQUENCE FOR THE MANUFACTURE OF CHEEK PIECES
(Figure 6)



THE PRODUCTION SEQUENCE FOR THE MANUFACTURE OF EAR GUARDS
(Figure 9)



SHAPING THE EAR GUARDS
(Figure 10)



duced by a cross pein hammer or a small fuller. In this case, the likely sequence of operations is that the sheet was brought to the required dimensions by hammering. The cross pein hammer was then used on the inner edge in order to bend the sheet to the required curvature.

Ear protectors

Although some helmets had no accommodation for the ears, some had simple cut-outs to improve hearing; the more sophisticated forms had ear protectors. These would have been produced from sheets of both ferrous and non-ferrous metal. The starting point was as always a block of metal; if it was to be made of iron, the initial stages are shown in the making of a helmet; if copper alloy, the starting point may have been a casting (see Figure 9).

The second stage (see Figure 9: B) was to produce a flat, smooth sheet. It was essential to have a smooth sheet of metal at this point, because removing imperfections from the surface was much more difficult when the piece had already been formed to shape. Forming it from smooth metal reduced production time later. This would have been best accomplished with rollers, if available.

To form the ear protectors, a template was probably used to mark the profile of the ear guard onto the sheet. This was an item that was likely to have been produced in large numbers and production time would have been reduced by making a template to draw around, as shown in Figure 9: C. A template would also have ensured uniformity in the items produced.

The blank for the ear protector (see Figure 10: B) would have been sandwiched between two formers (Figure 10: A and C) that were then clamped together. Its top edge would have been made level with the top edge of the formers, and all three pieces clamped together. A round-headed hammer would have been used to bend over the section of blank left exposed between the formers (see Figure 10: E). This amount of hammering would have produced significant work-hardening in the metal, giving the ear protectors greater structural strength.

Ear protectors were generally riveted to the body of the helmet. This is because soldering is a much longer process than riveting – is more time consuming and less effective. A riveted joint can withstand a slashing blow whilst a soldered joint would fail more easily.

Conclusions

During the first two centuries AD, the Roman military used helmets made of both iron and copper alloy. By this time, generations of improvements in infantry helmet morphology had led to the production of a piece of armour that gave very good protection, but did not restrict vision and only slightly reduced hearing. Helmets were produced either by raising or spin-

Greek helmet production

Production of the Greek bronze helmet began with multiple sheets of hammered bronze; some *Kegelhelm* examples needing five pieces riveted together. This was reduced when two halves were hammered to make the shape of the helmet and then riveted in a vertical join. On examples made in halves, the join of the sheets occurred in the middle and so was reinforced with a ridge-crest on the crown. And then, eventually (probably in the seventh century) helmets were made from a single hammered sheet to produce the bowl and other surfaces of the helmet. With these advances came other features such as the lowering of the crown to fit the skull more-or-less closely and full-face (Corinthian) rather than open-face (Illyrian) helmets. To this rounded crown fittings such as crest holders were attached. On some helmets cheek pieces were attached too – rather than being integral as on others; rivet holes to attach cheekpieces and perhaps an internal lining are visible on many surviving examples.

A so-called Kegelhelm from Cyprus, which shows both Greek and Assyrian influences, dated to ca. 600 BC.
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Remains of the city on the Magdalensberg in Austria, which includes a temple and praetorium. This site in Noricum was known for its high-quality iron and ironworks.

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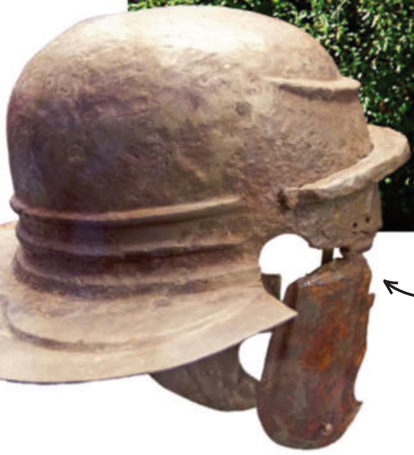

All-iron Imperial Gallic A (or Weisenau) type helmet, apparently lacking ear protectors.

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ning, and both of these methods were well established as ways of shaping metal. Both were in use before the foundation of the Roman Empire, and they were used in tandem during the first two centuries AD.

Cheek pieces and brow guards were widely fitted to protect the face from slashing blows. The back of the neck was protected by a rear projection that would have deflected downward blows and falling projectiles. Not all helmets were fitted with ear protectors, but those that were defended the wearer from downward blows, while hearing would not have been significantly impaired.

Surface marks left by forming were removed on the outside by filing, scraping, and polishing with various grades of abrasive. The marks left by the production process can often be seen on the insides of helmet bowls, and the parts of helmet furniture that are not outwardly visible. This gives a clue to the philosophy of the helmet makers. Well-finished interiors do not improve the effectiveness of the helmet and add to the time and cost of production; therefore, those parts did not have production marks removed. Classical sources explain how specialists were employed to make certain parts of helmets such as the cheek piece and it can be inferred that specialists were responsible for the production of helmet furniture, and the various components were brought together for assembly. From this it is possible to suggest that helmets (as well as other types of armour) were made in huge quantities on a system of large batch production. The production of a helmet was a skilled process which was, nevertheless, highly repetitive. Once learnt, a worker could produce a steady flow of helmets when required. AW

Dr David Sim is an archaeologist who has combined studies of the technology of the Roman Empire with his skills as a blacksmith.

A Roman anvil from the legionary fort armoury at Luguvalium (Carlisle, UK).

© Jamie Heath / Flickr

First century AD Roman funerary stele depicting a blacksmith at work. Now in the Altes Museum, Berlin, Germany.

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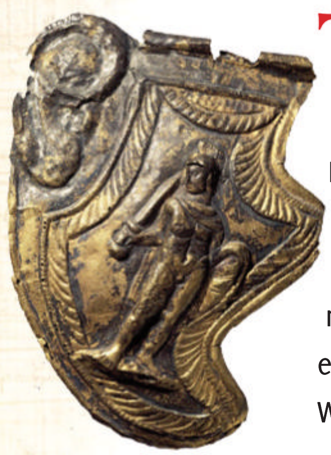
DECORATION ON ROMAN HELMETS

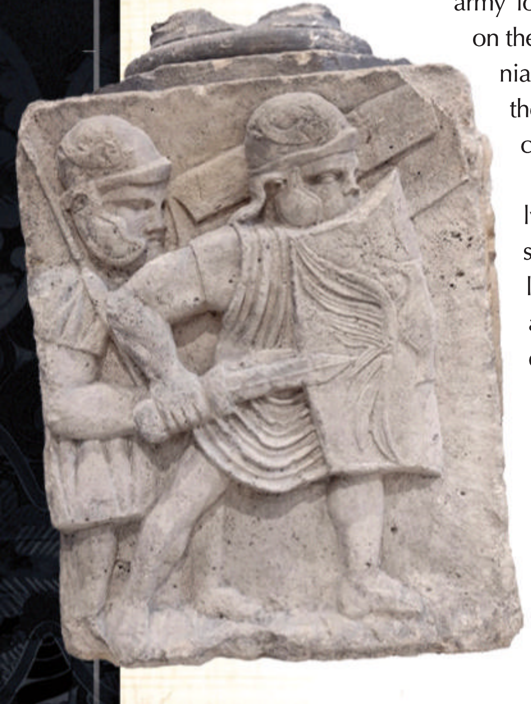
By Jo Ball

THE FACE OF VICTORY

Helmets were a vital part of Roman military kit, and a highly functional one — but decoration could also be incorporated into their design, with patterns and images providing a level of personalization. While many of the most elaborately decorated Roman helmets may have been ceremonial, others were intended to be worn in battle rather than on the parade ground. What designs were popular, and what messages were they meant to convey?



Tinned bronze right cheek piece of a cavalry helmet, ca. AD 1-100, from the Waal, the Netherlands, with an image of Mars.
© Rijksmuseum van Oudheden



Column base with relief from Mainz, Germany, depicting two legionaries, from the second half of the first century AD. Note the fish-shaped eyebrows on the helmet.
© Heiko Fischer / Wikimedia Commons

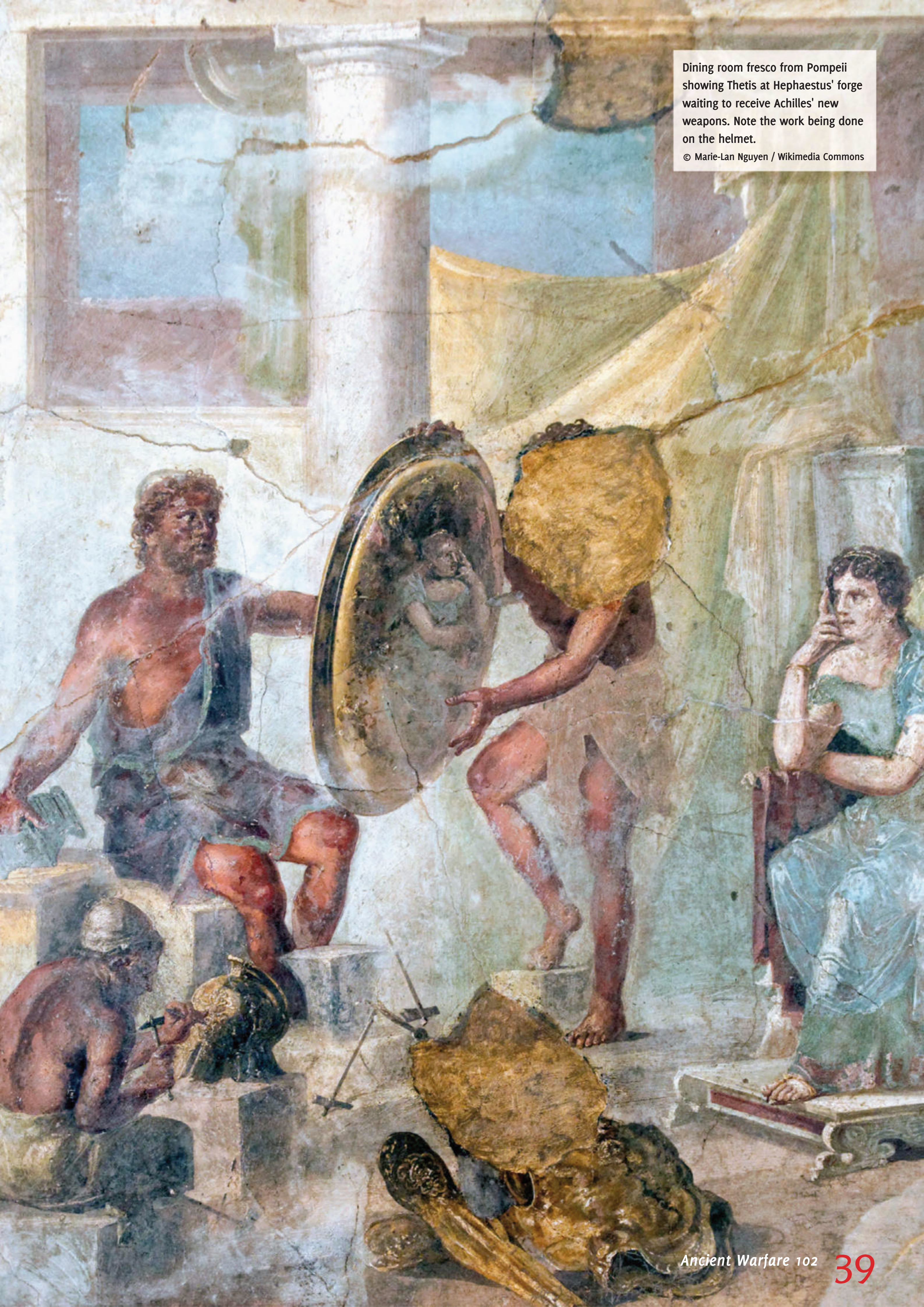
The appearance of Roman soldiers in armour is well known from numerous sculptural depictions. These reliefs provide a window into what these soldiers looked like – although these images were probably idealized rather than highly realistic, particularly those in the heart of Rome. Many early reconstructions of the appearance of Roman arms and armour were based on these sculptures, but did not consider that the figures would originally have been brightly painted with details that time has since taken from us. Some provincial depictions may have provided a more accurate depiction, for an audience more familiar with what Roman soldiers actually looked like. The depictions of Trajan's army on two different but contemporaneous monuments illustrate how different the portrayal of the same army could be. On Trajan's Column in Rome, the legionaries and auxiliaries of his army look very different to their counterparts on the Tropaeum Traiani in Adamclisi (Romania), dedicated to the same conflict around the same time, but in the area where the conflict actually happened.

Based on these images, it was initially believed that Roman military kit was standardized and centrally produced, leading to an idea of uniformity. As well as seemingly suiting the sculptural evidence from antiquity, this approach also satisfied early modern concepts of military uniforms, which aimed to standardize the appearance of soldiers. Subsequent archaeological research into Roman military equipment, however, increasingly suggests that there were differences in weapons and armour. Variety was apparently allowed as long as the equipment was of a sufficient quality, and provincial armourers thus put their own marks on the design. Roman soldiers would have looked similar, but not identical; the designs they chose to put on their kit was a visual military language which we can still read today.

Sourcing helmets

Roman soldiers paid for their own kit and probably had to do so multiple times, as elements needed repair or even replacement during a long career. Many chose to source their equipment from the army, paying for them through regular deductions from their pay. Others turned to the private market. Some soldiers bought kit from comrades who had replaced an older item, or retired veterans selling their old kit – a trade evidenced by helmets with multiple owners' names punched into the neck-guard.

Others turned to (possibly army-approved) private armourers, who might visit or even live in the settlements outside Roman military installations. For those with the means, there were opportunities to purchase not just plain and functional helmets, but something with a bit of decoration and individuality. This would not come cheap – although neither did plain helmets – and their owners are, therefore, frequently identified as being relatively high-ranking officers, although this may not always have been the case. The most elaborate designs are typically found on cavalry parade helmets but there is a clear overlap in iconography between these and more functional examples.



Dining room fresco from Pompeii showing Thetis at Hephaestus' forge waiting to receive Achilles' new weapons. Note the work being done on the helmet.

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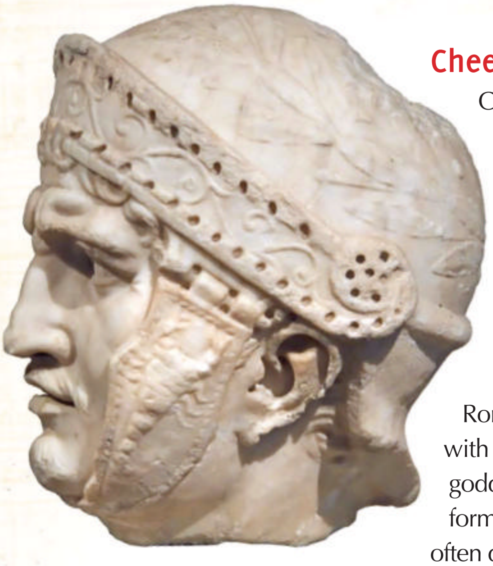

Marble fragment of a Roman soldier's helmeted head, once part of a Trajanic battle frieze, probably depicting scenes from Trajan's second campaign against the Dacians (AD 105-106). The helmet's cheekpiece depicts a scorpion, symbol of the Praetorian Guard, and the bowl has been decorated with oak leaves.

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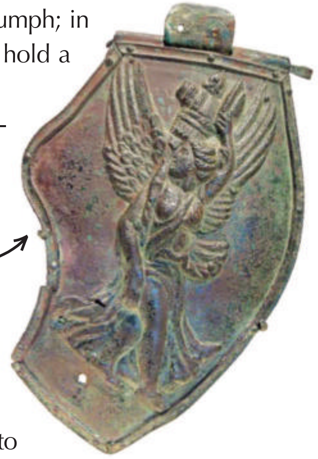
Cheek-piece design

Cheek-pieces offered an ideal opportunity for images to be incorporated into the design. They were highly visible, small enough that they might be more affordable to soldiers yet large enough that the decoration could be seen, and it was possible to replace or interchange them at relatively limited expense.

Many of the motifs used to decorate Roman helmets were symbols associated with military victory. A popular image was the goddess Victory herself, usually in her winged form, making her easily recognizable; she is often depicted alongside other icons associated with victory, such as laurel wreaths and palm fronds. Sometimes she is shown carrying a battlefield trophy. In a well-preserved example currently in the collection of the New York Metropolitan Museum, Victory is shown on a bronze left cheek-piece holding a trophy over her right shoulder. One more unusual example from Xanten (Germany) shows Victory killing a bull, in a scene that seemingly evokes the visual language of Mithraism, a religion popular with Roman soldiers – this may represent a deliberate combination of multiple religious elements.

Unsurprisingly, Mars was also a popular choice. He is depicted in a number of ways, both bearded and beardless, sometimes clothed and sometimes naked, but always recognizable due both to his stance and the military equipment he carries. The image of the goddess Minerva can also be found on numerous cheek-pieces, including on a well-preserved example from Vindolanda where she is depicted alongside an eagle. Eagles are equally a common design on cheek-pieces, where they may have either represented Jupiter or the military more generally. The eagles often (if not always) carry a laurel wreath in their beak, further emphasizing a connection to military triumph; in other cases, the eagle may hold a snake in its beak.

While deities associated with victory and warfare were most common on cheek-pieces, they are not the only divine figures to appear. Ganymede appears on several known examples, as do winged cupids, sometimes shown holding religious artefacts or animals. Although military deities were clearly more popular on cheek-piece design, these examples suggest that other gods sometimes made the cut, perhaps reflecting the personal preferences of the Roman soldier in question.



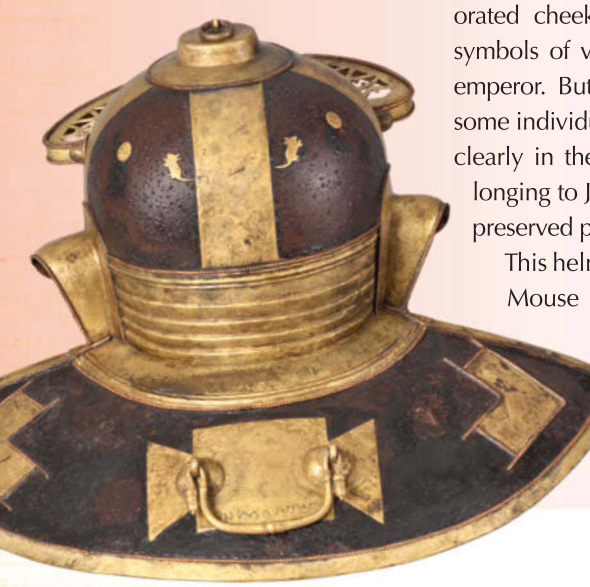
Cheekpiece decorated with Victory in her winged form carrying a trophy over her right shoulder.

© Metropolitan Museum of Art

Julius Mansuetus and the mice

The exquisite Julius Mansuetus helmet with two mice on the bowl chasing (presumably) food – the meaning behind these decorations remains a mystery.

© Metropolitan Museum of Art

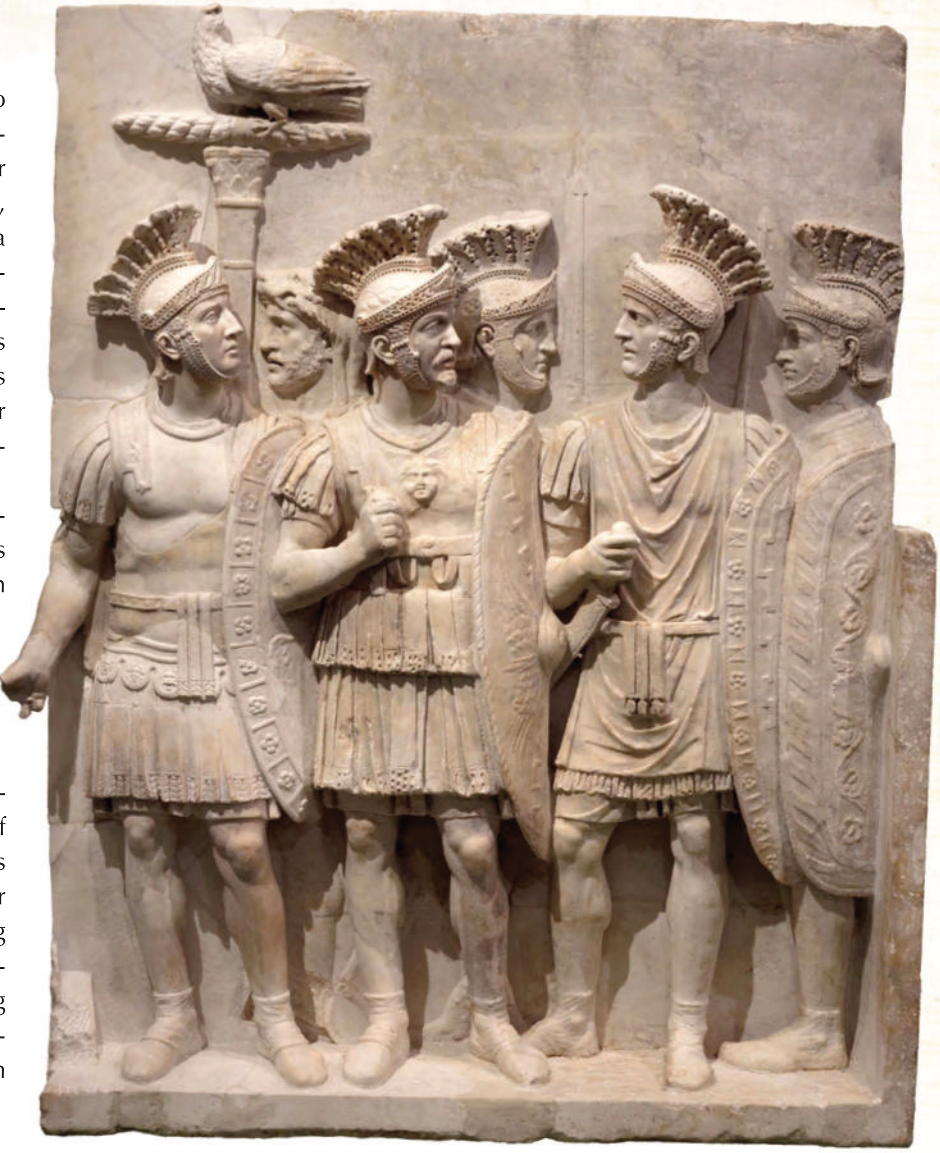


Although cheek-pieces provided a great medium for helmet decoration, the bowl of the helmet also saw decoration in some cases. The images used in these cases often overlapped significantly with the iconography which decorated cheek-pieces: military-related deities, symbols of victory, scenes of battle, and the emperor. But here, too, there was scope for some individuality – demonstrated particularly clearly in the case of an infantry helmet belonging to Julius Mansuetus, one of the best-preserved pieces from the Roman world.

This helmet, also known as the Guttmann Mouse Helmet, is inlaid on the back of the bowl with the image of two small mice and two circular objects which are probably loaves of bread (although cheese and nuts have also been suggested); its former owner is identified by a punched inscription on the neck-guard. The helmet dates to the mid-second century AD, and the reason behind its iconography remains a complete mystery. Suggested explanations range from Julius Mansuetus having been nicknamed 'mouse' to an unknown religious purpose. Mice are sometimes found in military contexts – such as the figurine of a mouse playing a trumpet which charms many visitors to the British Museum – and more widely in the Roman world could be associated with both protective qualities and the underworld, potentially. Why Mansuetus had two mice and loaves on his helmet is unknown, but their presence demonstrates the potential range of designs which could be used to decorate military kit, going far beyond traditional symbols of military victory.

Figures from Graeco-Roman mythology also make an appearance in cheek-piece decoration. A cheek-piece recovered from the River Tyne (Britain) features either Castor or Pollux, legendary twin heroes, standing alongside a horse which he holds by the bridle – presumably the other twin could be found on the opposite cheek-piece. The twins (also known as the Dioscuri) were commemorated as saviours of the Roman state, and were famed in myth for their horsemanship, something which doubtless appealed to cavalry soldiers.

The gods were not the only figures incorporated into the decoration of Roman helmets – the emperor, the figure at heart of the Roman state and one to whom the soldiers were encouraged to give their loyalty, was also featured in some designs. A cheek-piece from Vindolanda, dated to the first century AD, bears the image of a portrait bust of a member of the Julio-Claudian Imperial family, wearing a laurel wreath but otherwise absent of any other military insignia. Some cheek-pieces steered entirely away from either the divine or the Imperial, featuring instead scenes depicting animals. One cheek-piece from Britain is decorated with the image of two dogs hunting a stag – a popular design for pottery in Roman Britain – similar imagery is found in examples from Germany. Lions and leopards also feature on a few examples, including some in hunting scenes where they also chase down a stag.



The Praetorian relief from the Arch of Claudius. The (heavily restored) pseudo-attic helmets have been extensively decorated.

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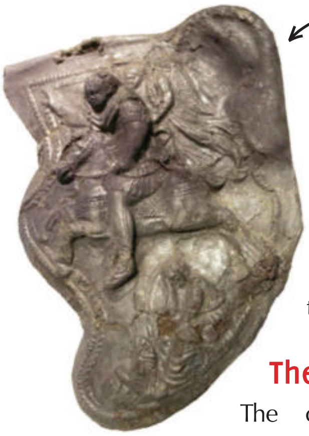

One of the seven Hallaton Helmet cheekpieces showing the emperor on horseback, crowned by Victory.

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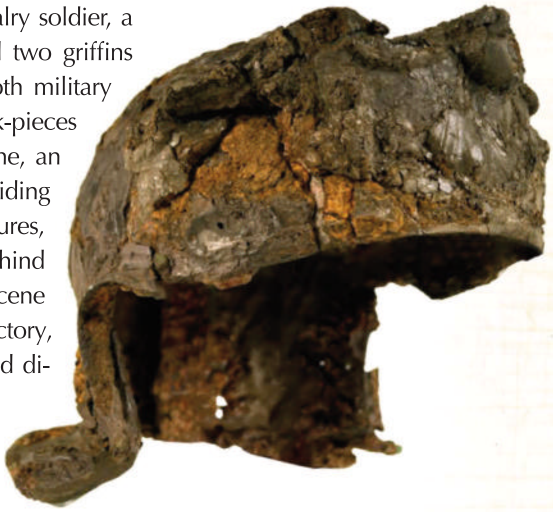
The Hallaton helmet

The conventional imagery of cheek-pieces could be combined in some cases and, as one example from Britain suggests, potentially mixed-and-matched to suit the occasion. The Hallaton helmet, a silver-plated example discovered in 2000 in Leicestershire, dates to the earlier first century AD. It was seemingly deposited as a votive offering around the time of the Roman conquest of Britain from AD 43 onwards. It was found at what appears to have been an indigenous shrine, with more than 5000 Iron Age and Roman coins also found at the site – how it came to be in indigenous hands is unclear. The helmet was discovered with seven cheek-pieces inside the bowl. Although obviously the helmet would only have needed two cheek-pieces at a time, it is possible that it came with multiple extras that could either replace damaged pieces or be swapped in to change the helmet's appearance on different occasions.

The helmet bowl is elaborately decorated with a female deity figure (who could be Victory, Minerva, or Bellona), a cavalry soldier, a defeated and crying female, and two griffins – all symbols associated with both military victory and protection. The cheek-pieces feature a variety of designs. In one, an emperor is shown on horseback, riding over several enemy barbarian figures, with a winged Victory flying behind him holding a palm frond. The scene is one of unambiguous military victory, shared jointly between mortal and di-



The Hallaton Helmet, a cavalry helmet originally plated with silver and gold leaf. It is decorated with images of goddesses and equestrian scenes (now heavily corroded), ca. AD 20/30–50.

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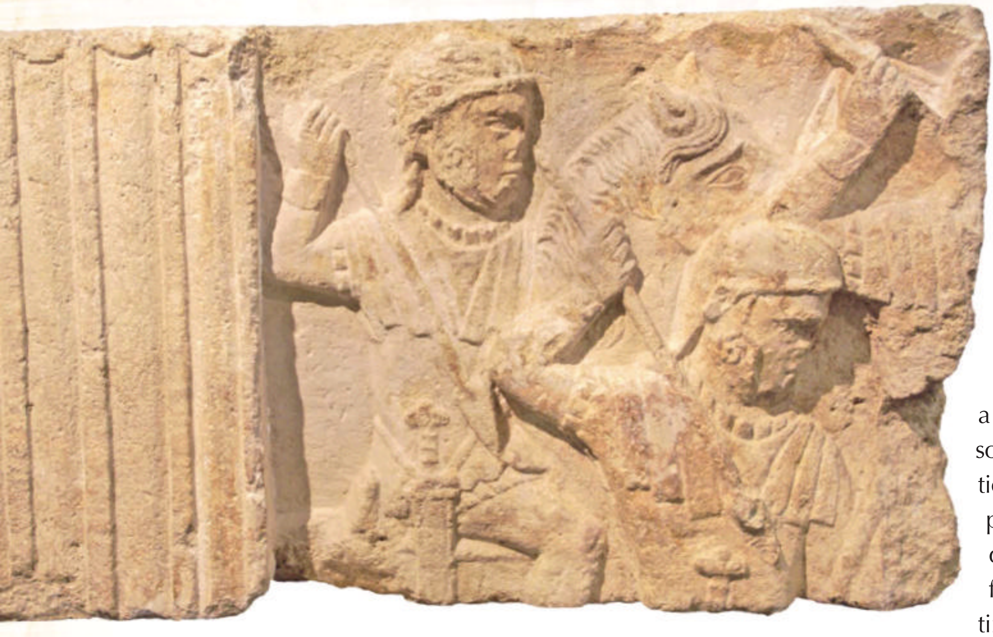

Roman cavalrymen relief, ca. AD 50-100. The helmet bowl of the left-hand man has been carved in imitation of hair, in the fashion of some early Imperial cavalry helmets, and both visible cheekpieces are decorated.

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vine power. Aside from the goddess, the scene is very similar to cavalry rider tombstones of the same period, suggesting that there was an overlap between military funerary art and kit decoration. A similar image features on another of the cheek-pieces, although in this instance Victory is shown holding a laurel wreath over the head of the emperor rather than a palm frond. The enemies being trampled in the scenes are generally non-specific 'barbarians', yet in another of the cheek-pieces the clothing worn by the figures seems to identify them as Dacians. Another, less well-preserved piece depicts a figure holding a cornucopia, standing above some Roman military equipment; unfortunately, the level of preservation is not sufficient to allow a clear identification of the figure. The Hallaton helmet shows the potential diversity of cheekpiece design, and it is intriguing to imagine the original Roman owner swapping them to suit a particular occasion.

From design to purpose

Decorated helmets, or even just cheek-pieces, would have been more expensive than their plainer counterparts, suggesting that there must have been some purpose beyond functionality behind the use of designs. There are a few different potential reasons for doing so – and indeed, more than one (or even all) of these may have applied simultaneously.

The first potential benefit is that the images might have brought you good luck and protection, particularly in cases where a military-related deity was depicted. Roman soldiers appear to have been highly superstitious as a group – understandable given their profession – and always looked to secure additional divine protection wherever possible, from votive dedications to amulet-type fittings worn with their kit. Including the image of the deities most connected to the military may have been felt to increase the chances that these gods would bestow survival and even glory on the wearer – or indeed, could recognize and thank them for the times when they had already brought good fortune in the past.

Decorative helmets likely also made the Roman army seem more terrifying on the battlefield. The appearance of the Roman army seems to have had a psychological impact on the enemy on the battlefield, from the shine of kit to the range of colours on display. While the decoration might not have been identifiable from any distance, it may have contributed to an overall appearance which could strike terror into the enemy; during the Republican period, Caesar once worried that the lavish kit sported by Pompey's soldiers would intimidate his own (Plutarch, *Pompey* 69). The more magnificent a soldier's appearance, the more intimidating he

Right cheekpiece with the depiction of a temple, the precise symbolism of which is unclear.

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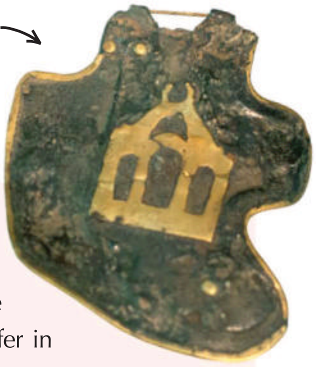

The Matilo helmet, ca. AD 50-100, includes two different temples in its decoration, as well as a dolphin and another sea creature.

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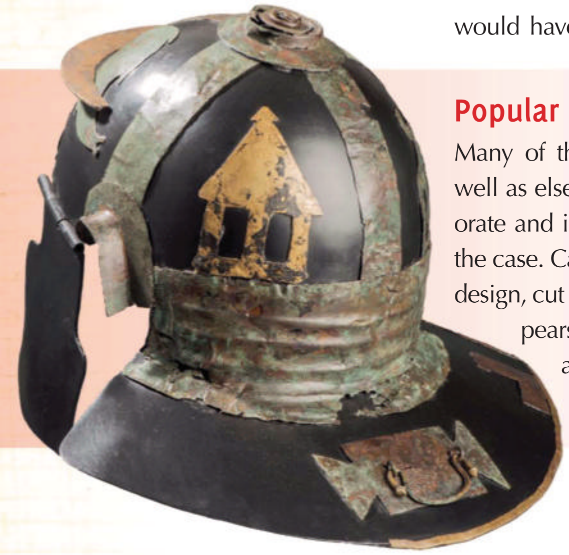
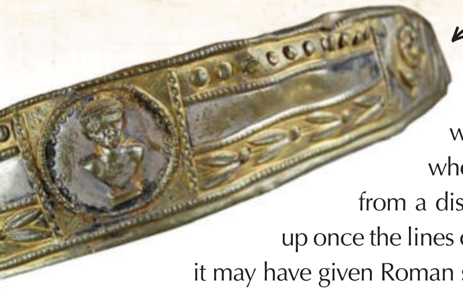


Popular designs

Many of the decorations on cheekpieces, as well as elsewhere on helmets, are highly elaborate and individualistic. But that's not always the case. Case in point may be a simple temple design, cut from a piece of sheet bronze that appears on cheekpieces and helmets bowls along the Rhine frontier. Very similar examples have been found in Leiden, Nijmegen, and Worms, a span of some 500 km. The designs differ in the detail of the execution, suggesting they weren't made in the same workshop - though we can hardly exclude that possibility. It does point to a degree of fashion or copying of styles and designs among soldiers.

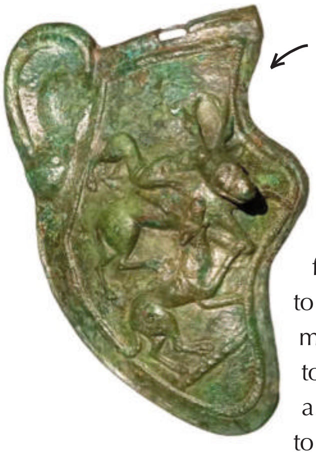


Browband from a Roman Attic helmet, with a medallion enclosing an emperor's bust. It is unclear which emperor it represents.

© Rijksmuseum van Oudheden

would appear, whether en masse from a distance or close up once the lines came together; it may have given Roman soldiers an additional edge when it mattered the most.

Personalizing your appearance through a decorative helmet was a way to mark yourself out from your fellow soldiers on the battlefield. One of the potential advantages of doing so was that any acts of bravery you committed in battle would be more readily credited to you, something which was particularly important if it came with military honours. Soldiers must have been confident in their abilities on the battlefield, however, as distinctive decoration would also make you recognizable for errors or cowardice in combat. The fact that a soldier was able to afford an elaborate design might also have indicated to viewers that he was of a certain status, either due to rank or acts of bravery in the past which had come with monetary reward – either way, it would communicate that this was a noteworthy individual.



Right cheekpiece from a Roman cavalry helmet with a deeply embossed hunting scene.

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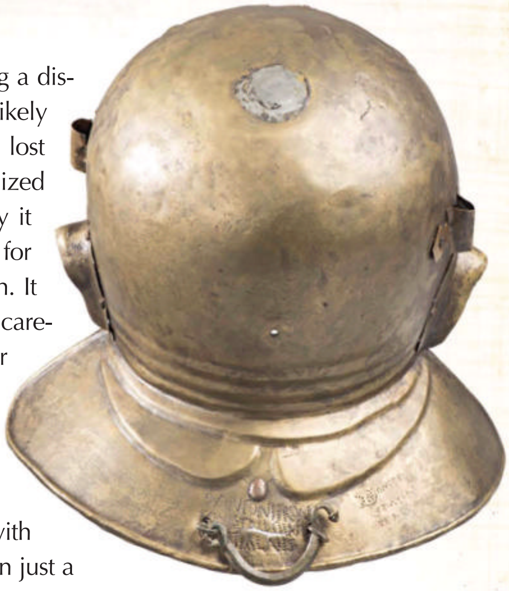
On a more pragmatic level, having a distinctive helmet might have made it less likely that this expensive bit of kit would be lost to another soldier – the more individualized (and well-known) it was, the less likely it was for another soldier to mistake it for their own, or try and pass it off as such. It may also have made soldiers more careful with their kit, less likely to lose it (or worse, cast it away in battle); Caesar is said to have encouraged his men to inlay their swords with gold and silver so they would be less likely to misplace them (Suetonius, *Caesar* 67). Helmets with decorative cheek-pieces were more than just a piece of armour, they were a valuable resource with monetary, military, social, and religious value – but they were still something which could be a burden in the wrong circumstances.

For Roman soldiers, the decoration on their helmets provided a way to stand out from the crowd, to personalize their kit through designs they found likeable, fashionable, or even protective. The images they chose provides a direct connection with the men who once wore this kit, and the imagery they hoped would bring divine favour, advertize their military abilities, or even just reflect their personality; the examples which survive provide a unique window into the military world.

Jo Ball is a regular contributor to **Ancient Warfare** ***magazine.***



Roman legionary helmet with the names of two owners punched into the neckplate: Titus Allienus Martial(n)is, and Statorius Tertius, both from the *centuria* of Antonius Fronto. From Buren, the Netherlands.

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Roman frieze depicting legionaries wearing various designs of helmets, from Cumae, Italy, first century AD. Whether the plumes and what seems to be horns represent individual tastes or a unit designation is unclear.

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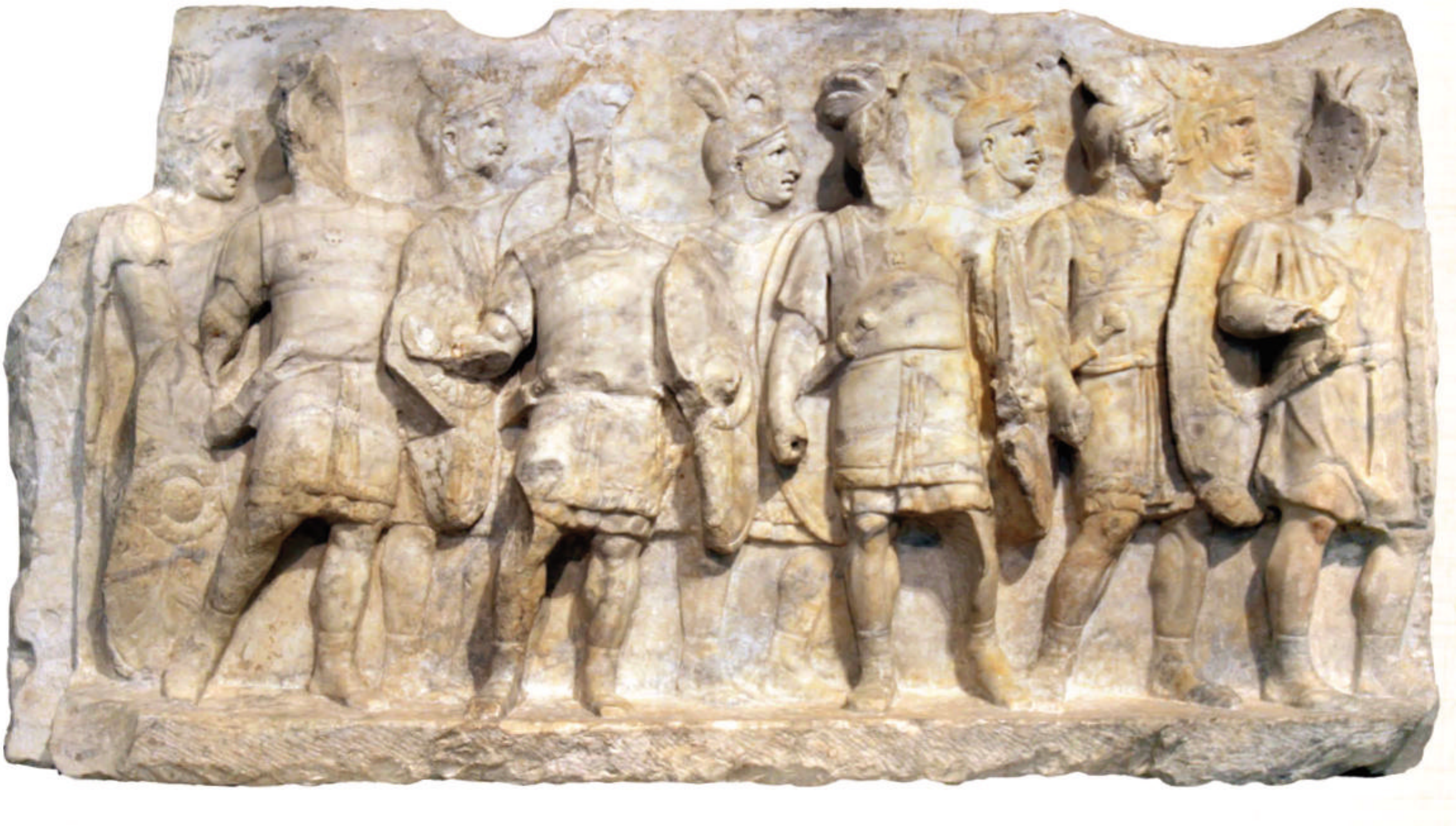
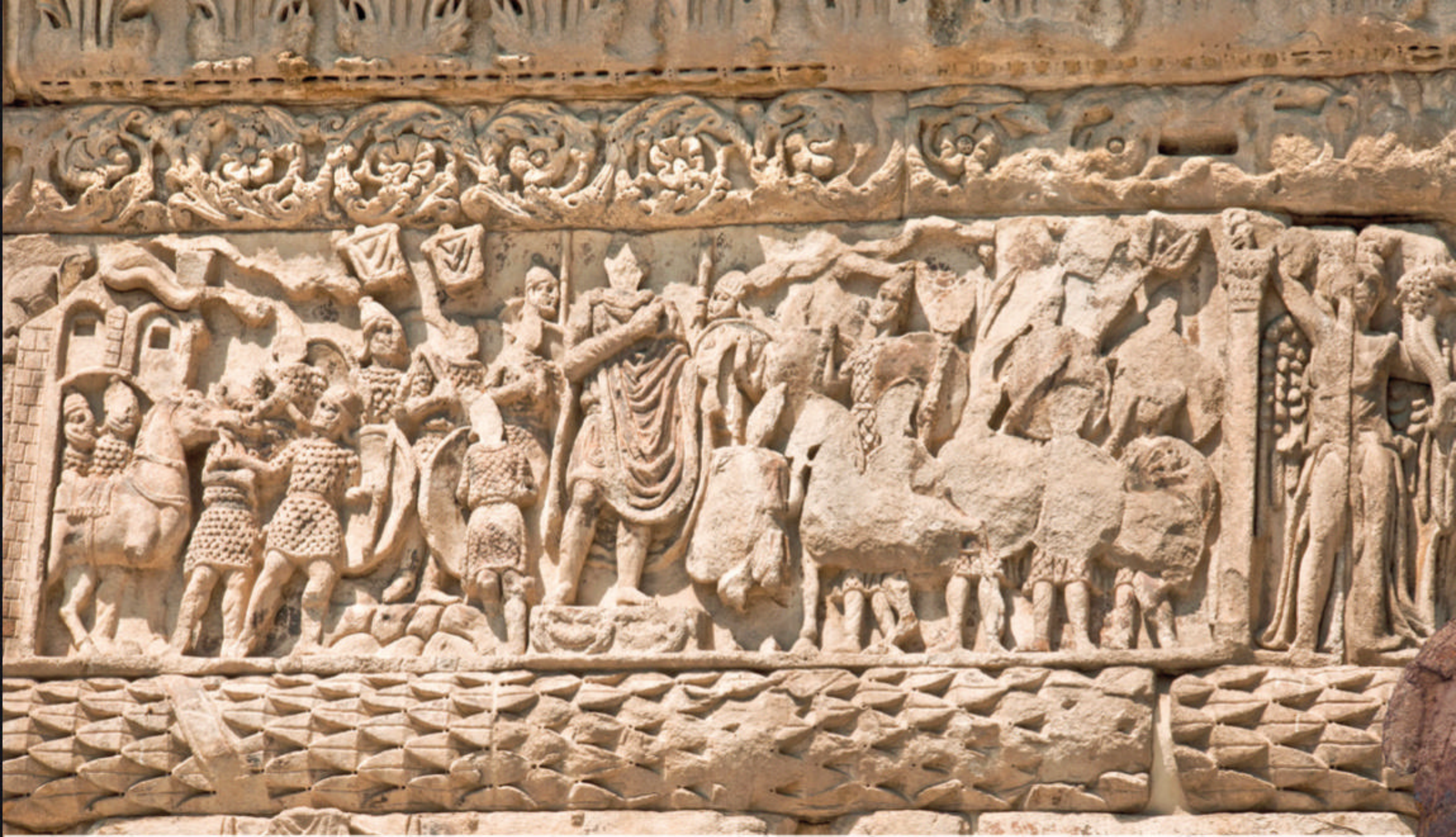




The Arch of Galerius, erected in Thessaloniki in AD 298, contains some of the earliest depictions of multi-part helmets in Roman art.

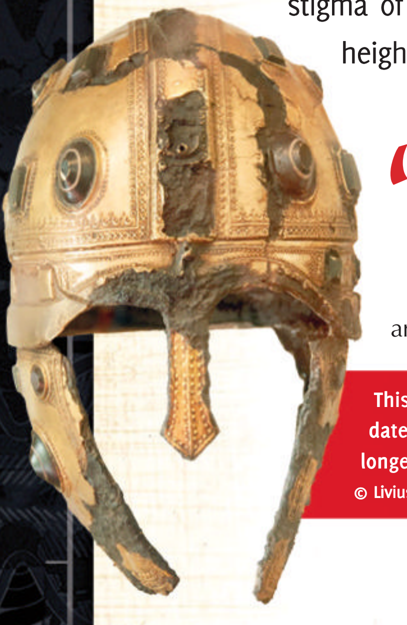
LATE ROMAN HELMETS

BY RIDGE AND SPANG

By Evan Schultheis

The late Roman 'ridge helmet', 'band helmet', or *spangenhelm* tends to invoke the same stigmas that are applied to the later Roman army: cheap, mass manufactured, and representative of barbarian influence and decline. They are often positioned in stark contrast to the seemingly more advanced single-piece helmets of the classical Roman army. Study of these helmet forms, however, coincides with changes in scholarship surrounding the Late Roman military itself, bucking the stigma of a declining, undisciplined entity for the height of professionalism and effectiveness.

'Segmental' helmets, a broad family of helmets made in multiple pieces, are characterized by the fundamental similarities – and distinctions – in their construction. The most common forms are the 'band helmet', 'ridge helmet', 'lamellar' or 'splint helmet', and *spangenhelm*. A 'band helmet' and 'ridge helmet' are constructed in the same way, with one longitudinal band running all the way along the helmet from the brow to the nape, holding its two (or four) 'bowl-forming' plates together, differentiated by the shaping of a ridge in the band itself. A *spangenhelm* differs in that its 'bands' or 'straps' (*spangs*) begin at the lower rim and end at the crown of the bowl, being joined by a finial, instead of continuing all the way across the bowl's arc. A 'lamellar' or 'splint' helmet typically has a large number of 'bowl-forming' plates, usually around two dozen but sometimes far fewer, which wrap around the head overlapping in the same direction. Of course, many hybrids of these forms exist as well, which makes classification difficult for archaeologists. But these forms represent most of the corpus of late Roman, Germanic, Steppe, and Sasanian helmets.



This 'ridge' or 'comb' helmet from Budapest, Hungary, dated to the first half of the fourth century AD likely belonged to a wealthy officer of the Roman army.
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Introduction to Rome

The origins of multi-part helmets which enter the Late Antique Mediterranean world in the AD 200s remain uncertain. Recent evidence points towards an origin in Central Asia, where early forms of band and ridge helmet appear in art. Excavations at Dura Europos revealed a two-part helmet of Sasanian origin, with a

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separate reinforcing 'ridge' attached to the top which has been proposed as the predecessor to the late Roman ridge helmet. By AD 273, the earliest helmets of the Roman form, combining the ridge into the central band that held the helmet's bowl together, can already be found at Augusta Raurica (modern Augst, Switzerland) on the upper Danube. Other forms were entering the Roman world as well: lamellar or splint helmets, well-known from a much later find near Niederstotzingen, first appear in Roman use on the Arch of Galerius from AD 298–305. On the same arch ridge helmets and single-piece helmets of a style known from the fortress of Petra-Tsikhisdziri, Lazica (now Georgia) can possibly be recognized. Finally, prototypes of the *spangenhelm* entered the Roman world from the steppes in the mid-fifth century, which the Romans refined into their own style. While the exact routes and methods of transmission remain uncertain, it is generally agreed that the Sasanians, Alans, and Huns were major catalysts for the introduction of these helmets.

Excavations at Dura Europos yielded an iron Sasanian helmet dating to the city's destruction in AD 257.

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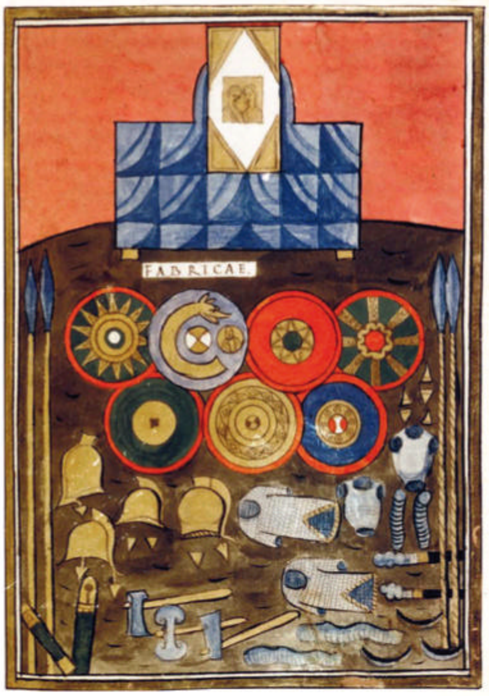
Ridge helmets

Broadly grouped into two styles, the *Intercisa*- and *Berkasovo*-types, the late Roman ridge helmet is found in a variety of contexts. These range from deposits in the rubbish heaps of fortress workshops to so-called 'warrior' or 'weapons' graves, usually consisting of a male occupant with a complex of multiple high-status military objects. Some have been found in large hoards owing to the collapse of a building, such as at Koblenz, Intercisa, or Iatrus-Krivina. Although a tiny number of solely iron examples are known, typically, only the gilded silver sheath survives. This suggests that even the rank-and-file of the *limitanei* (see *AW* XII.6) were issued these helmets. This sample of about a hundred or so helmets may, however, also be the result of survivorship bias. After all, precious metals are more likely to be deposited for their value and last longer in the soil as well. The distribution of these helmet finds across both infantry and cavalry contexts suggests any distinction between the two roles and their headgear had disappeared in the late AD 200s. Only the *Berkasovo*-type has, however, been found



The *Notitia Dignitatum*, a registrar of dignitaries and military units dating to about AD 405 for the Western Empire and 445 for the Eastern, lists numerous arms factories called *fabrica*, together with the armaments they produced.

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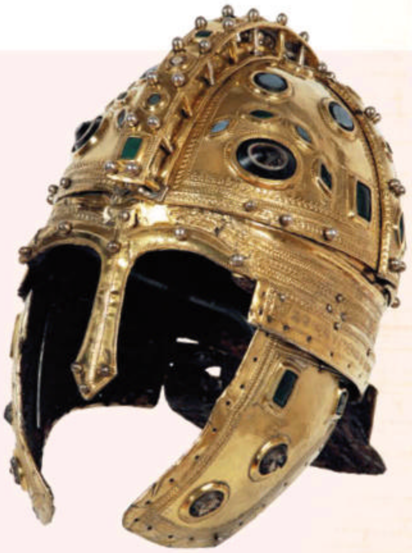
The Berkasovo Treasure

In a small village in northern Serbia in 1955, one of the most spectacular Late Roman finds was made. Berkasovo was close to Roman Sirmium (modern-day Sremska Mitrovica, Serbia), the provincial capital of Pannonia (and later Pannonia Secunda) and one of the four imperial capitals from AD 294. It was also the headquarters of the *praefectura praetorio per Illyricum* (the praetorian prefecture of Illyricum) in the mid-fourth century.

The Berkasovo Treasure consisted of early-fourth-century items, including three 'ridge' helmets, one with a bowl in four parts and the other with two parts of the bowl joined by a central, longitudinal ridge. These are now known as Berkasovo I and II. The third, less decorated helmet in the same style as Berkasovo II was also found (Berkasovo III). The helmets were made of iron and covered in a gilded silver sheet for decoration and protection from corrosion. Additional decoration varied, with the most decorated example including various glass gems embedded in the gilded layer. Ammianus Marcellinus tells us that the emperor Valentinian, while fighting the Alamanni in 368, lost a helmet which was "adorned with gold and precious stones" (27.10.11). With its glass decorations, the Berkasovo II helmet may have been imitating such costly examples. The Berkasovo II helmet also has a Latin inscription referring to the emperor Licinius (r. 308–324), who fought against Constantine I (r. 306–337). Licinius based himself at Sirmium to fight the Sarmatians in 310, and in 314 he fought (and lost) in Pannonia against Constantine at the Battle of Cibalae (modern Vinkovci, Croatia – itself only 43 km from Berkasovo). Similar helmets have since been found nearby.



This ridge helmet from Berkasovo was decorated by covering the iron with a sheet of gilded silver foil. This helmet is decorated with gems set into the foil (*cabochon*) as well as decorated stained glass (*intaglio*).

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A subtle change in the way Roman mail was created during the later Empire coincides with the changes in helmet design.

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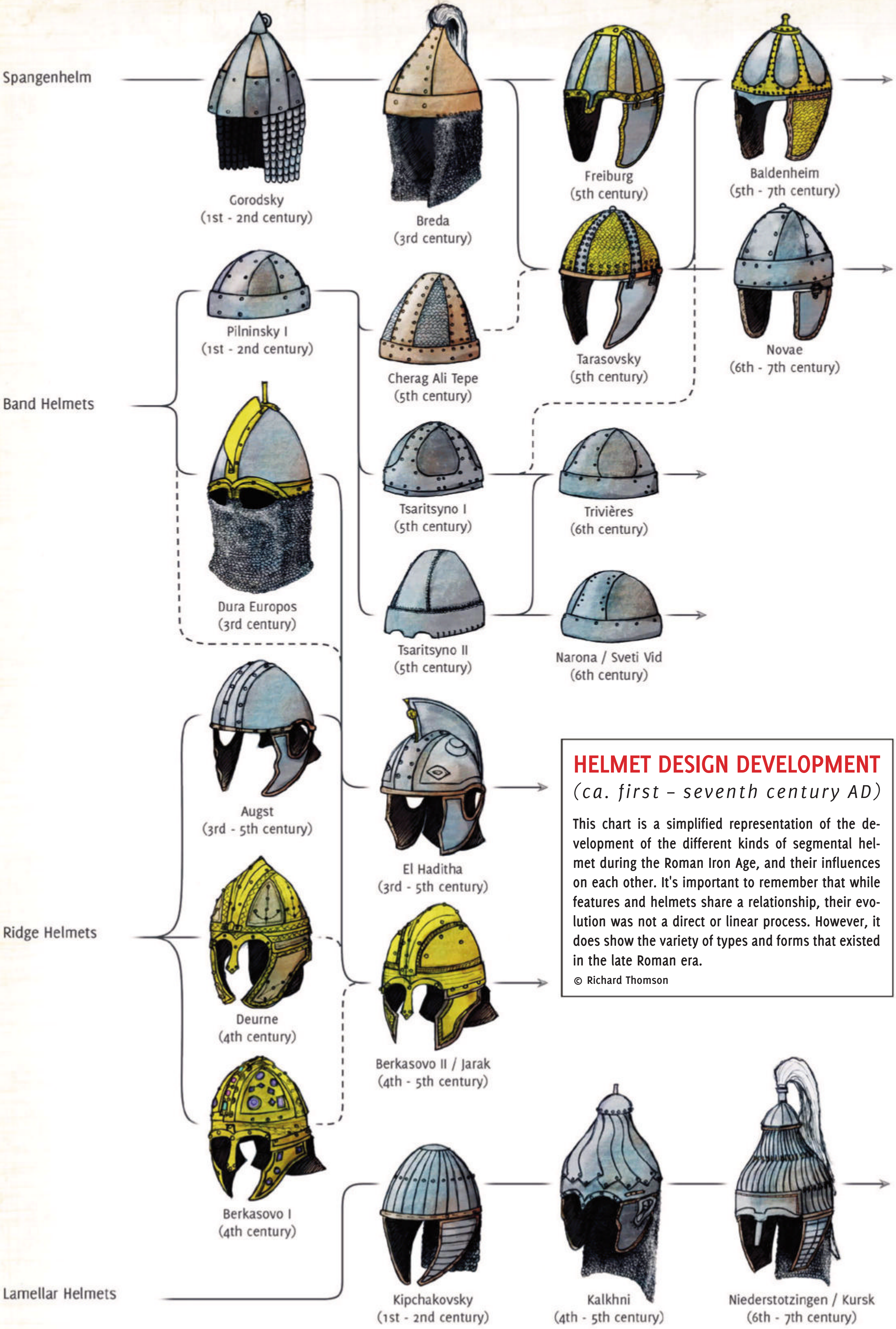

Spangenhelm
Gorodsky
(1st - 2nd century)
Breda
(3rd century)
Freiburg
(5th century)
Baldenheim
(5th - 7th century)
Tarasovsky
(5th century)
Novae
(6th - 7th century)
Band Helmets
Pilninsky I
(1st - 2nd century)
Cherag Ali Tepe
(5th century)
Dura Europos
(3rd century)
Tsaritsyno I
(5th century)
Trivières
(6th century)
Tsaritsyno II
(5th century)
Narona / Sveti Vid
(6th century)
Ridge Helmets
Augst
(3rd - 5th century)
El Haditha
(3rd - 5th century)
Deurne
(4th century)
Berkasovo II / Jarak
(4th - 5th century)
Berkasovo I
(4th century)
Lamellar Helmets
Kipchakovsky
(1st - 2nd century)
Kalkhni
(4th - 5th century)
Niederstotzingen / Kursk
(6th - 7th century)

HELMET DESIGN DEVELOPMENT

(ca. first – seventh century AD)

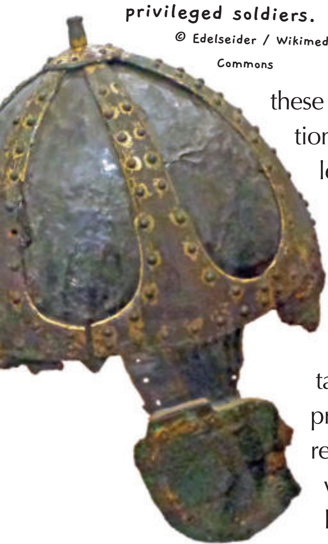
This chart is a simplified representation of the development of the different kinds of segmental helmet during the Roman Iron Age, and their influences on each other. It's important to remember that while features and helmets share a relationship, their evolution was not a direct or linear process. However, it does show the variety of types and forms that existed in the late Roman era.

© Richard Thomson

with the high-status *cabochon* (precious stone inserts) and *intaglio* (stained glass) decoration that reflects an officer's station.

Archaeologists have grappled with the question of why the Romans transitioned from the single-piece late *Weisenau*-type helmets of the third century (such as those from Niederbieber, Buch, and Rainau) to the multi-part helmets of late antiquity. For much of the twentieth century, academics argued that the simpler construction of the later helmets reflected a decline in the quality and capability of both Roman craftsmen and the administration, associated with an overall narrative of 'decay' and 'barbarization'.

Modern scholars have offered more nuanced hypotheses, however, rejecting these biases and mischaracterizations of the Roman army. The leading hypothesis is that the transition from single-piece to multi-part helmets echoed the reorganization of the state as a more centralized entity. The establishment of arms factories provided an opportunity to replace an old craft tradition with a new one, especially due to the need to train large numbers of semi-free labourers. This hypothesis would also explain why recent scholarship has shown that the late *Weisenau*-type helmets lasted much longer than previously thought, extending well into the late fourth century.


The Baldenheim type of helmet was gifted to foreign leaders and privileged soldiers.
© Edelseider / Wikimedia Commons

Other hypotheses have received less scholarly attention but are worth considering. Modern reenactors and armourers have suggested that the shearing force of failing rivets absorbed more energy, therefore offering more protection than a single-piece helmet. The multi-part construction would have also made repairs easier, as seen with several hybridized or recycled helmets from sites such as Worms. This phenomenon fits with the pattern of a significant increase in metal recycling in Late Antiquity. The reality may be a combination of all three hypotheses, or a new, unvoiced proposal.

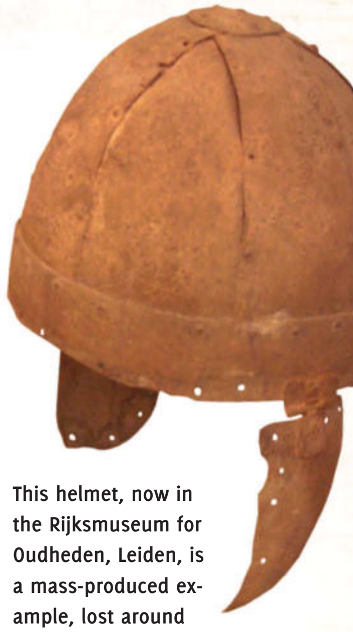
Early Byzantine helmets had a major influence on their Merovingian counterparts, which produced four-panel Band helmets, such as this.
© Livius.org

The *spangenhelm*

A change in craft traditions may also explain why the Romans abandoned the ridge helmet in favour of the *spangenhelm* and band helmet. From the late fifth to late sixth centuries, the the construction of *lorica catena* ('mail' armour) changed. It is argued that an influx of Transdanubian craftsmen entering Roman arms factories during the fifth and sixth centuries can be associated with this change. This phenomenon may help explain the change in helmet fashion, as craftsmen immigrated to fill labour shortages in the Roman arms industry, bringing their generational traditions of manufacture with them. Through the late fifth and into the early seventh century, the *Baldenheim*-type *spangenhelm* became a prestigious gift that marked service to the emperor, found in graves from France to Africa and as far north as Gotland, Sweden. While some of these gilt and silvered helmets are found in contexts that may reflect use by rank-and-file *milites*, the majority of finds from Roman sites exhibit the use of a less prestigious band helmet or *spangenhelm*, both types of which (the *Narona*-type and *Leiden Museum*-type) are also distinct to Roman manufacture.

The Late Roman period saw a wide variety of helmets in use, which reflected its army's multiethnic character, but also continued to display to Rome's enemies that they were dealing with a trained, professional, high-status force. The multi-part helmets came and went with the great migrations, being supplanted in the 800s once more. While earlier helmet forms may represent Rome's ability to take existing technology and innovate upon it, the ridge helmet and *spangenhelm* can also be moved away from the perspective of decline, and brought forward to representing an exchange of ideas that characterized the Late Antique Mediterranean world, connecting to the far ends of Eurasia.

Evan Schultheis received his Master's Degree in History from Winthrop University in 2024. His article: 'The Late Roman Segmental-Type Family of Helmets: A Reassessment of their Evolution and Classification from the 3rd to 7th Centuries' is currently in review.


This helmet, now in the Rijksmuseum for Oudheden, Leiden, is a mass-produced example, lost around the time of the Persian or Arab conquest of Egypt in the early 600s.
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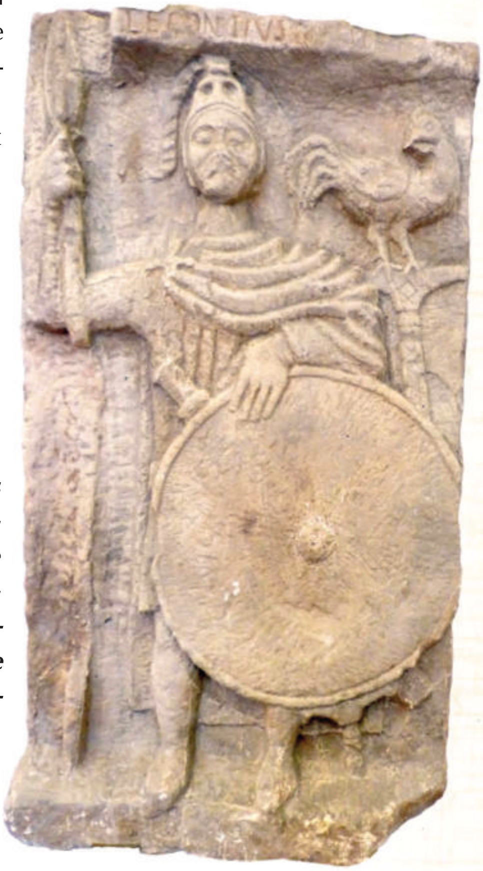
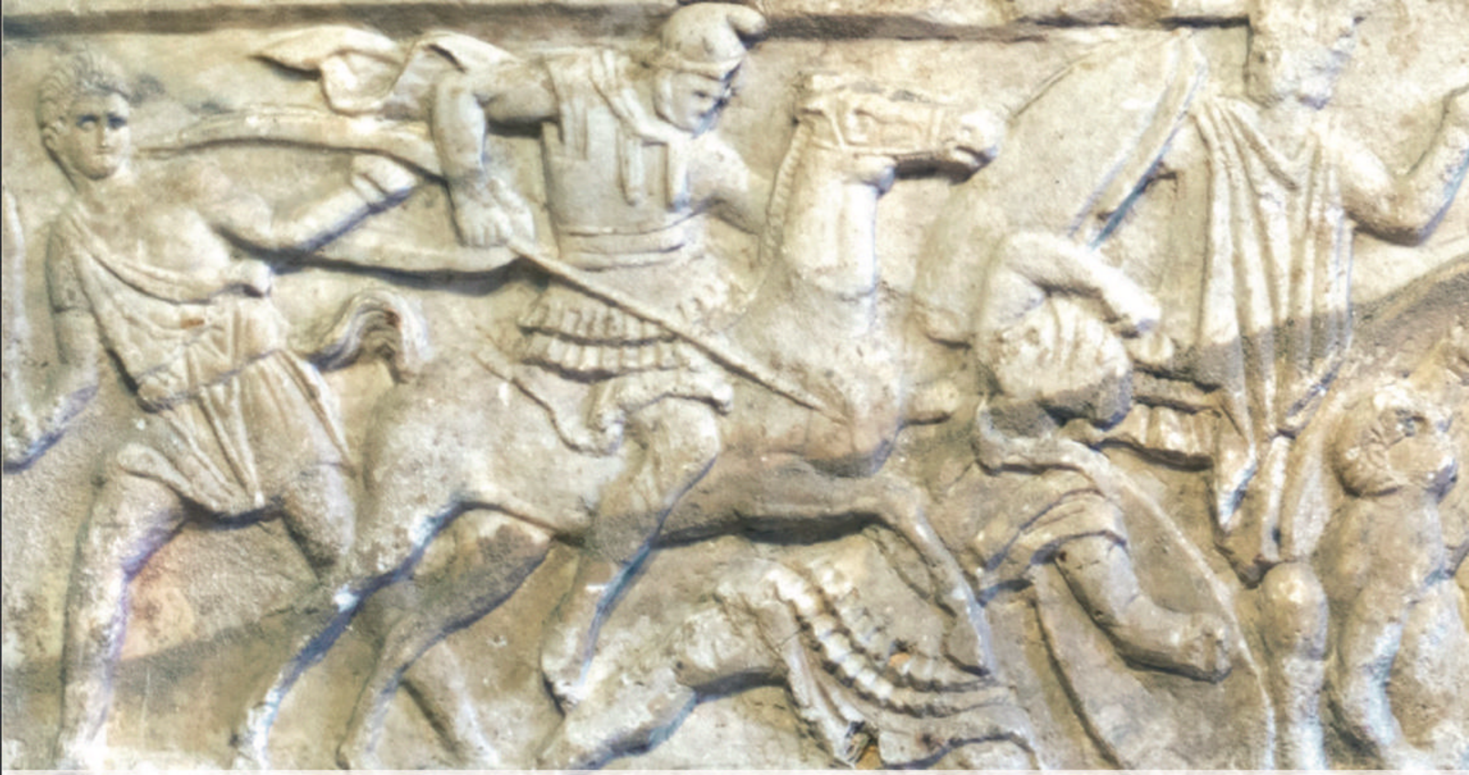
The tombstone of Lepontius, in the Museum of Strasbourg, dates to the middle of the fourth century AD. and is a unique depiction of the Roman ridge-type helmet.
© Wolfgang Sauber / Wikimedia Commons





Detail of an Etruscan alabaster sarcophagus with Greeks fighting against Gauls, a so-called *Celtomachy*, second half of the third century BC.

GAULS AT THE BATTLE OF TELAMON

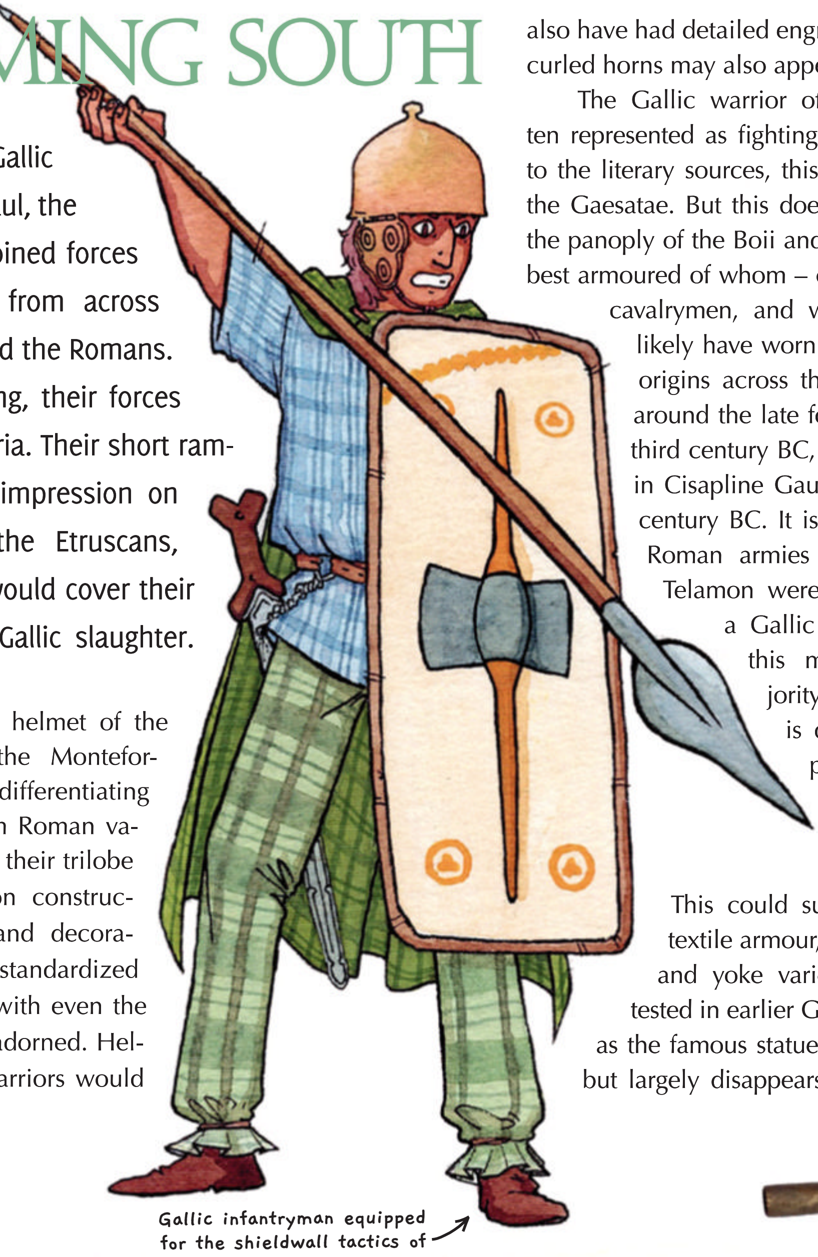
STORMING SOUTH

By Velite Aquila

In 225 BC, two Gallic tribes of Cisalpine Gaul, the Insubres and Boii, joined forces with the Gaesetae from across the Alps and attacked the Romans. At least 50,000 strong, their forces quickly overran Etruria. Their short rampage left a lasting impression on the Romans and the Etruscans, who from then on would cover their art with scenes of Gallic slaughter.

The Gallic helmet of the time is the Montefortino, but differentiating them from Roman varieties are their trilobe cheek pieces and iron construction. Helmet shape and decoration is noticeably less standardized than Roman models, with even the top knob often being adorned. Helmets of upper-class warriors would also have had detailed engravings. Short and curled horns may also appear at this time.

The Gallic warrior of this time is often represented as fighting nude. According to the literary sources, this was the case for the Gaesatae. But this does not account for the panoply of the Boii and the Insubres, the best armoured of whom – chieftains, nobles, cavalrymen, and warlords – would likely have worn mail. This had its origins across the Alps, dating to around the late fourth century and third century BC, and was adopted in Cisapline Gaul in the late third century BC. It is possible that the Roman armies at Faesulae and Telamon were the first to face a Gallic foe equipped in this manner. The majority of the infantry is described as well protected against javelins with their cloaks and trousers. This could suggest the use of textile armour, likely of the tube and yoke variety, which is attested in earlier Gallic culture, such as the famous statue at Roquepertuse, but largely disappears from the artistic



Gallic infantryman equipped for the shieldwall tactics of a Gallic formation.

© Velite Aquila

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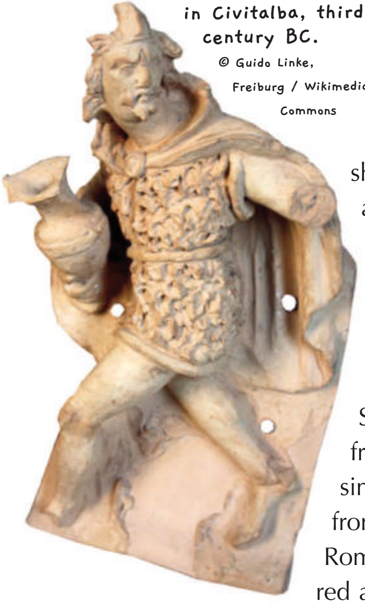
tradition in the fourth century BC. The reliefs of the Sanctuary of Athena from Pergamon show what could be a Celtic cuirass as a trophy, which suggests that, at least amongst the Transalpine Gauls and Galatians, this style of armour continued into the second century BC. The Gallic shield of this time varied widely in length and shape, as depictions of both oval and rectangular shields survive. The Gallic shield may not have been meant to cover the whole body; artistic depictions show it as long and thin and Polybius describes the Gaesatae as unable to adequately protect themselves with their shields from Roman javelins. Shield decorations from the period appear simplistic. The frescoes from the Arieti tomb in Rome, for example, show red and yellow borders on largely white shields, while an Etruscan sarcophagus presents a rectangular shield with four small circles with clover-like designs on the inside along with an undulating stripe dashing across the top.


Sculpture detail of a Celtic warrior from a temple in Civitalba, third century BC.
© Guido Linke, Freiburg / Wikimedia Commons

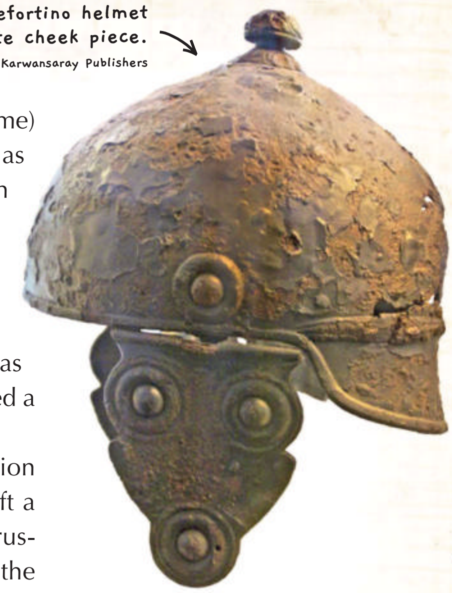
Gallic swords at this time are long (around 60 cm) and made for slashing. The quality of swords varied, with literary sources holding Gallic swords in low regard, often referring to their tendency to bend upon the first few blows, but this is an obvious generalization. Art from the period shows that the bilobe pommel was the most popular. These swords would have been carried in an iron scabbard, suspended from the famous chain belts made of iron or bronze.

The Gallic spear is notable for its length and the size of the spearhead, ranging from 45 to 70 cm in length for the spearhead alone. These often had a pear-shaped blade, thin at the tip, broadening at the base. These spears had small, tanged butt spikes, in some cases with a rounded tip. Spears were possibly called *gaiastus* (from which the Gaesatae may derive their name) in the Gallic language, and often used as a synonym for the *soliferrum*, an all-iron javelin. Its usage at this time is debatable, as despite earlier finds at La Téne sites in the fifth century, these seem to disappear in Gaul. The long spear may have been replaced by javelins more akin to *pila*, as ancient sources claim the Romans adopted a javelin by the name of *gaesum*.

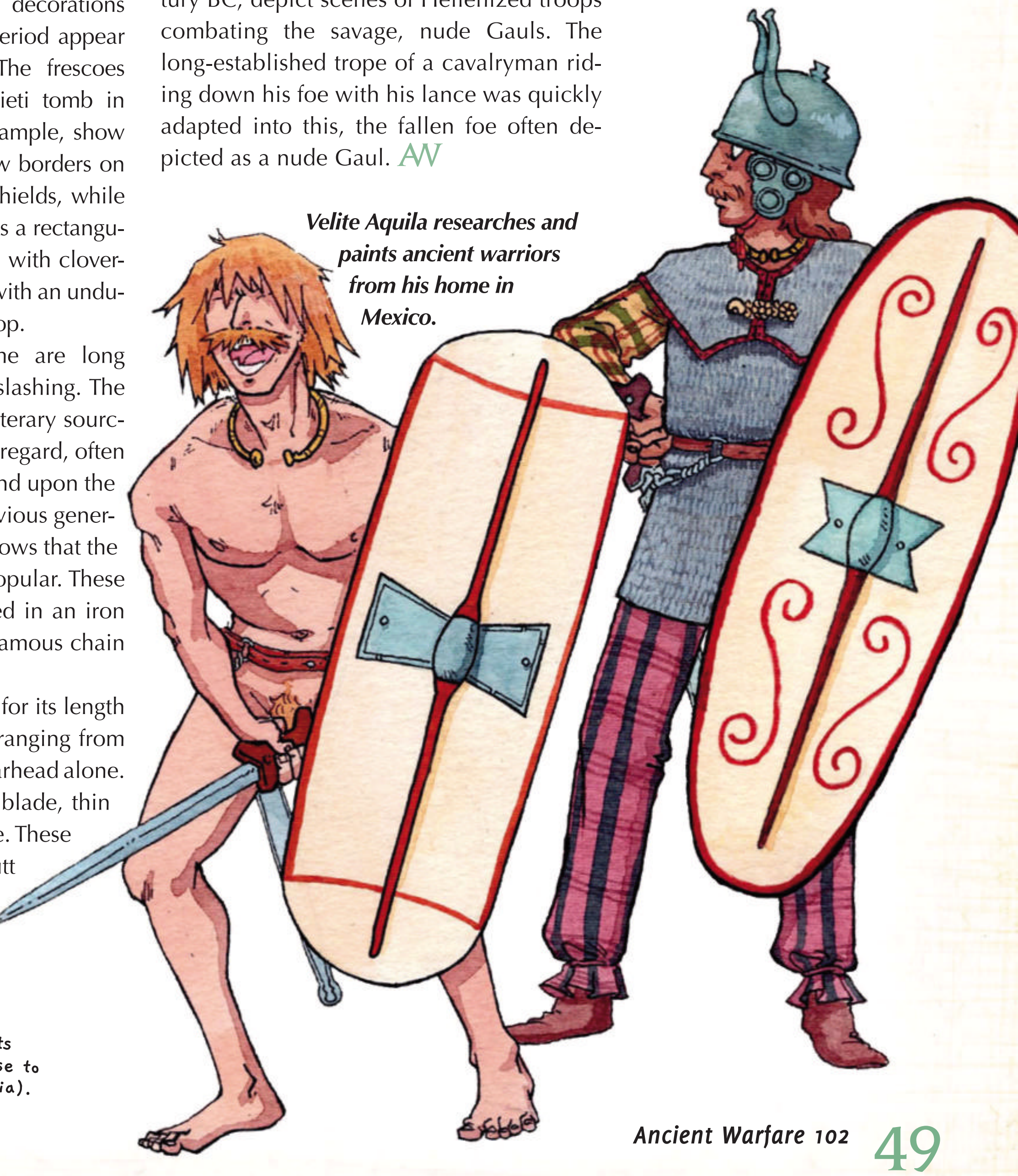
Despite the relatively short incursion by the Gauls, the invasion of 225 BC left a lasting effect on both the Romans and Etruscans, most notably in their art. Though the motif of the naked Gaul stretches back into the fifth century BC, the Gaesatae certainly inspired the many depictions of nude Gauls after them. Notably, after this incursion, the Celtomachy increased in popularity in Italian art. Etruscan urns and sarcophagi that survive today, many of which can be dated to around the last quarter of the third century BC, depict scenes of Hellenized troops combating the savage, nude Gauls. The long-established trope of a cavalryman riding down his foe with his lance was quickly adapted into this, the fallen foe often depicted as a nude Gaul.

Velite Aquila researches and paints ancient warriors from his home in Mexico.

Celtic Montefortino helmet with trilobate cheek piece.
© Karwansaray Publishers



A Gaesatae warrior, inspired by the Arieti tomb frescoes, stands next to a Gallic noble.
© Velite Aquila



Two Celtic spear points from Viminacium (close to modern Kostolac, Serbia).
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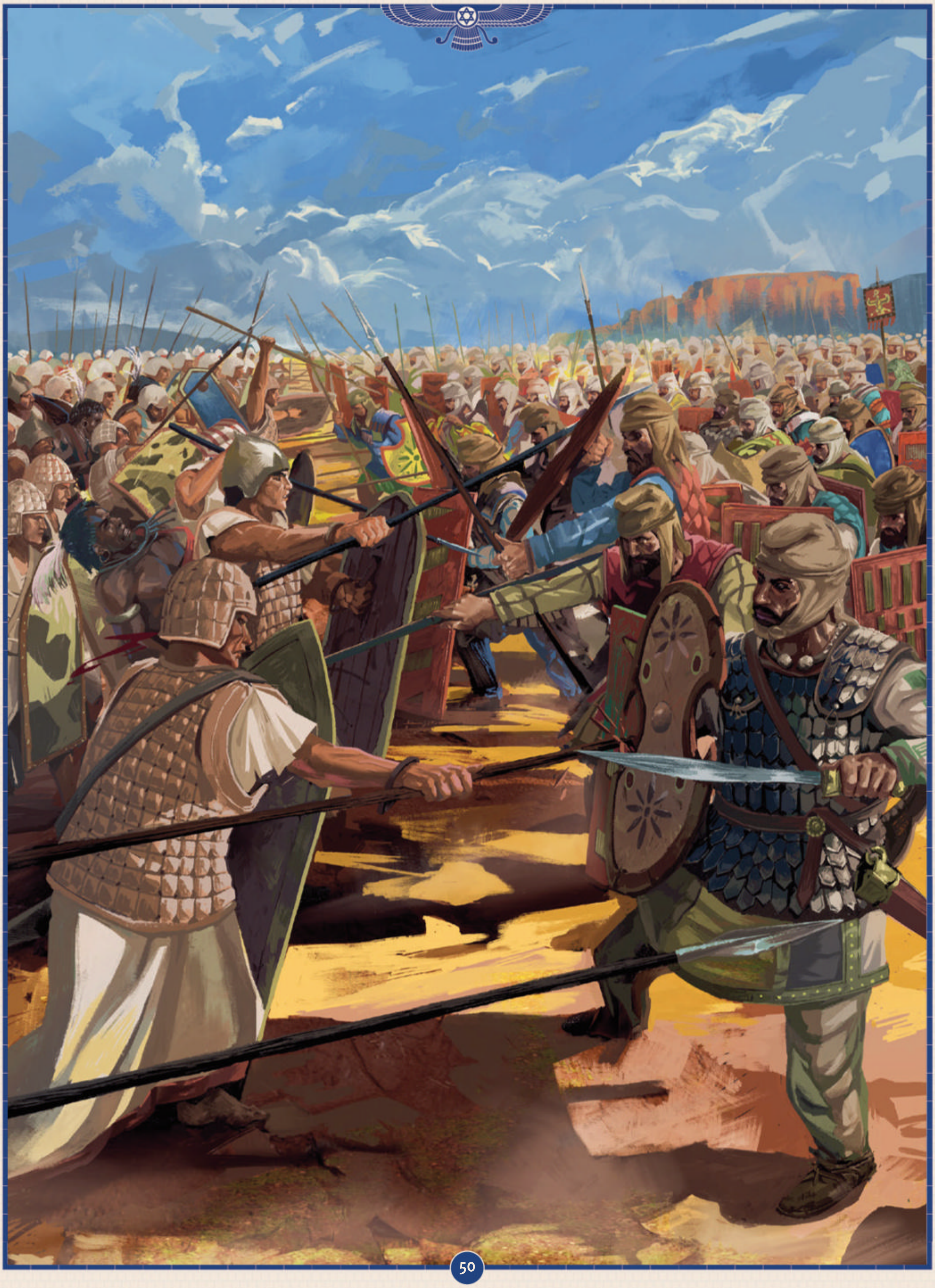


JEWISH SOLDIERS SERVING FOREIGN KINGS

UNDER EGYPTIAN & PERSIAN BANNERS

By Haggai Olshanetsky

Jews are not usually associated with military service, and especially not with serving foreign rulers. This is, however, an anachronistic view based equating ancient Jews with their modern orthodox descendants. Recently more attention has been paid to Jews in the service of foreign powers, in most cases Rome. In contrast, here we will review the service of Jewish soldiers in both the Pharaonic Egyptian and later Persian armies. They are intimiately connected, as most evidence for Jews serving the Pharaohs also indicates such service to the Persians.

Several verses of the Hebrew Bible have been used to illustrate Jewish service in foreign armies at a relatively early period. Some scholars have claimed that the 'Kings Law' (Deuteronomy 17:16) was intended to prevent the habit of providing the Pharaohs with Hebrew troops in return for horses for the Judaean kings' armies. Another assertion is that this law was conceived specifically in opposition to the deeds of King Manasseh (r. 697–643 BC) who may have conducted such transactions despite the fact that most of his subjects wished for the men to be returned. If true, this is possibly the earliest evidence for Jewish service in Pharaonic armies, and the only evidence which implies such service under the 25th dynasty (744–656 BC).

The most famous evidence for Jewish military service comes from the island of Elephantine. Papyri discovered on this island in the late nineteenth century revealed that the garrison was predominantly Jewish, had a long-standing presence, and was the foundation for a flourishing Jewish community (see *AW* XIII.5). The papyri were composed throughout the fifth and into the fourth century BC, covering most of the Persian first conquest of Egypt which lasted from 525–404 BC. This period is known as the First Egyptian Satrapy or the 27th Dynasty.

The Persian conquest of Egypt where Jewish troops fought alongside others (such as Nubians) against the invader during the 26th Dynasty.
© Akshay Misra

As can be learned from the archive of the Jews of Elephantine, the garrison was known as *Hyl' yhwdy* (the "Jewish/Judaean corps"). According to the Elephantine archive, the local Jewish temple was destroyed by the priests of Khnum in 410 BC. The priestly community and the Jews bickered over the sacrifices conducted in the Jewish temple on the island because the priests saw the Jewish sacrifices as disturbing their own worship in their (separate) temple of Khnum. And so the Jewish community petitioned the Persians to allow them to reconstruct their own temple. As part of this petition, the Jews claimed their temple existed before the Persian conquest.

This suggests that this Jewish garrison may have served (at least) the 26th Egyptian dynasty (664–525 BC). Such a claim is, indeed, feasible. It fits the assumption that the new Jewish temple on the island was at first intended to replace the destroyed temple in Jerusalem, which was reconstructed only in the last two decades of the sixth century BC. After the Second Temple in Jerusalem was inaugurated, the Jewish community in Elephantine maintained communication with the new Temple of Jerusalem.

This claim is supported by multiple testimonials as well. Other documents highlight the existence of the community, garrison, and temple throughout the entire fifth century BC. Thus, it is feasible that they may have lived there at least a few decades earlier.

The papyri from the island also included documents written after 404 BC, indicating that the Jewish community continued to exist and possibly serve militarily under the rule of Amyrtaeus of Sais (r. 404–398 BC). Amyrtaeus, the sole ruler of the 28th Dynasty, governed Egypt following Egyptian independence from Persian rule. Unfortunately, the archive does not include documents that can be securely dated beyond 400/399 BC. Because of this, some historians suggest the Jewish community and garrison started to disintegrate around this time. The correlation between the death of Amyrtaeus of Sais and the last documents in the archive suggests that the Jewish community/garrison may have relocated following the rise of Nefaarud I, who established the 29th Dynasty (398–379/8 BC).

Earlier Egyptian service

In the context of Jewish service in dynastic Egypt, the passage in Jeremiah 44:1, referring to Jews in Egypt is particularly relevant. It has led several scholars to raise the suggestion that the Jewish communities at Migdol, Tahpanhes, and Memphis, named in this verse, were possibly military settlements or garrisons, similar to the one in Elephantine.

In this and the following verses, Jeremiah refers to these communities in Egypt as equal to the Jewish community in

Jerusalem, implying that the Jews were possibly a demographically significant group in Egypt. Moreover, if these cities were indeed Jewish military settlements, the verse could provide evidence of the significant role Jews played in the Pharaonic army of the 26th dynasty.

Additional evidence of Jewish service under the 26th dynasty prior to 525 BC exists, as well as under the Persian kings after their conquest of Egypt. For example, in the following section in the *Letter of Aristeas*, it is said:

> *"The number of those whom he (Ptolemy I) transported from the country of the Jews to Egypt amounted to no less than a hundred thousand. Of these he armed thirty thousand picked men and settled them in garrisons in the country districts. (And even before this time large numbers of Jews had come into Egypt with the Persian, and in an earlier period still others had been sent to Egypt to help Psammetichus in his campaign against the king of the Ethiopians. But these were nothing like so numerous as the captives whom Ptolemy the son of Lagus transported.)."*
>
> – *Letter of Aristeas* 13

This text focuses on the large numbers of Jews brought to Egypt by Ptolemy I. However, its significance is key as it compares previous Jewish recruitment in the Persian and Pharaonic periods. It describes how their rulers also recruited large numbers of Jews as garrison troops and field units. Moreover, it implies that even though the previous recruitment and resettlement of Jews by past rulers were significant, Ptolemy's was even more extensive.

Furthermore, the extract mentions that Psammetichus employed Jewish troops in his military campaign against the Ethiopians, referring to either Psammetichus I, who campaigned in the mid-seventh century BC, or Psammetichus II, who campaigned in the early sixth century BC. Such evidence for Jewish service in Egypt in the seventh or sixth century BC independently supports the Jews of Elephantine's claim of living and serving as the garrison of the island before the Persian conquest of 525 BC. Furthermore, this lends credence to the suggestion that the list of places mentioned in Jeremiah 44:1 may represent more locations where Jews composed part of the local garrison.

Under the Persian banner

Both the Egyptian and Persian rulers brought Jews to Egypt to employ them in garrisons and to serve as the long arm of the throne. This arrangement likely arose from two factors: first, the belief that, as foreigners, the Jewish soldiers would owe their status and wealth to the ruler who stationed them there, fostering their loyalty, and second, the perception among Persian and Egyptian rulers which saw Jewish soldiers as both competent and loyal. This perspective is consistent with the reputation of their Israelite and Judeans predecessors, who were similarly esteemed by the Assyrians for their loyalty and military competence (see *AW* X.4).

As was previously mentioned, the *Letter of Aristeas* describes how Ptolemy, like the Persian kings, brought Jews to Egypt. Moreover, the Persian kings' actions are mentioned as separate, and yet similar, to what the previous rulers of Egypt had done. As the *Letter of Aristeas* explicitly mentions Jews being resettled by the Persians, it is not a reference to the Jewish presence in Elephantine or any of the other previously mentioned sites. Thus, this suggests that numerous places had a Jewish presence, including as military settlers and garrisons. The account in the Letter of Aristeas can be considered relatively reliable as it aligns with the historical context of the period, as well as with other evidence from the Hellenistic period. Consequently, it can be inferred that Jewish soldiers were stationed in various locations in Egypt and played a critical role within the military forces available to the Persians.

The *Letter of Aristeas*' reference to the Persian resettlement of more Jewish troops in Egypt, in greater numbers than under the 26th dynasty, may possibly allude to an incident documented on the statue of Udjahorresnet, a high-ranking naval officer under the Pharaohs of the 26th dynasty, who went on to serve the Persians after their conquest of Egypt in both religious and administrative roles. According to the inscription on the statue, the Persian king received a plea from Udjahorresnet requesting the removal of foreign elements who had settled in the temple of Neith in Sais. These foreigners were probably mercenaries or foreign troops, with some suggesting they were Greek troops who had served the last king of the 26th Dynasty. If they had served the previous rulers, however, the plea should have been phrased as a request for assistance in their removal, not as a petition for permission. Moreover, a new reading of the inscription mentions that the foreign soldiers were given time to collect their belongings before leaving. Such actions were typically not extended to foreign troops who had served the enemy and were due to be deported. Accordingly, it has been suggested that they were not Greeks, but rather troops who served the king of Persia and were brought to Egypt by him, possibly from west Asia. Based on the suggestion that the troops were of west Asian origin, it is possible they were Jewish. As previously discussed, there is evidence for the Persian resettlement of Jews as garrisons in Egypt, a practice with a well-established tradition and precedent. Most importantly, in the Udjahorresnet inscription, these foreign troops were accused of interrupting the temple's work, and their beliefs/religion were the main issue and the reason for the need to move them, as the temple needed to be purified after they left. This suggests that the religion of the foreigners was very different and possibly not a polytheistic religion which accommodated the worship of other gods. The locals' complaints may have stemmed from a Jewish presence in the temple, rather than an active interruption of worship.

Such a scenario is similar to what occurred in Elephantine in 410 BC between the Jews and their neighbours, led by the priests of Khnum. The priests viewed the Jewish sacrifices in the Jewish temple as disturbing their worship in their separate temple of Khnom, and in retaliation they burnt the Jewish temple. Similarly, in Sais the Jews may have been seen as disturbing the worship of another god, even if there was no overt action as such; their mere presence and existence may have been seen as disruptive.

Further possible evidence of Jewish service in the Persian army can be found in St. Jerome's *Chronicon* (§B359). There, Jerome mentions Jews who were resettled on the shores of the Caspian Sea. Although the circumstances are unclear, it is possible they were resettled there to create a military settlement, community, and garrison. The dating of the text is also problematic, with some suggesting it may refer to events occurring in 359 BC, when Artaxerxes III came to power, due to its location in this chronologically organized text.

Josephus (*Jewish Antiquities* 11.32), referring to the reign of Darius the Great in the late sixth century BC, also provides insight into the loyalty of the Jews and their service to the Persian crown, including in sensitive positions. According to the story, the Jewish Zorobabēlos, the Achaemenid governor of Judaea who reconstructed the temple in Jerusalem, was later appointed as one of the king's bodyguards. It remains uncertain whether this was a ceremonial or an actual military position, yet its significance lies in demonstrating that Jews were regarded as loyal and capable of attaining such high-ranking and sensitive roles, positioning them amongst the Persian aristocratic and military elite. Furthermore, it is similarly ambiguous whether Josephus intended to imply that the two other bodyguards mentioned in the text were also Jewish. Yet, it is vital to be cautious in accepting this text at face value, as Josephus wrote centuries after the event, and may have had an agenda of portraying the Jews in the best possible light. On the other hand, evidence for Jewish service and the overall reliability of Josephus supports the possibility that this account may, in fact, be historically reliable.

The last evidence chronologically, in terms of historical realia mentioning Jewish service in the Persian army and the loyalty of the Jews, can once again be found in Josephus (*Jewish Antiquities* 11:317–318). This passage refers to the reign of the last Achaemenid king, Darius III, during his battle against the invading Alexander the Great. Alexander sent a messenger to ask for the Jews to side with him and to send him men for his army. Alexander explicitly requested troops, alongside other provisions including taxes, and he specified that he required precisely what had been previously demanded by and provided to the Persian crown. Accordingly, this is sound and unambiguous evidence of Jewish military service in the armies of Persia, which included Jews from Judaea, Egypt, and all other regions ruled by the Achaemenid throne, as far as the Caspian Sea.

Moreover, the refusal of the high priest to cede to Alexander's demands was a clear indication of the loyalty that the Jews were renowned for, and which made them sought after as troops by all the rulers of the great empires of antiquity. The decision of the high priest, and later the Jewish community as a whole, to shift their allegiance when Alexander was at the gates of Jerusalem, should not be interpreted as a fault but rather as consistent with the rules of loyalty during antiquity. The reversal in loyalty only occurred after Alexander had conquered their land. Changing allegiance in such circumstances was not considered an act of disloyalty but a pragmatic and natural response. Individuals were not expected to sacrifice themselves in resistance to a new ruler, particularly when the previous ruler had abandoned both the land and its people. Upon regaining their lost territories, rulers expected several things from their subjects: no rebellions and a return to service, even unto death, including in wars thousands of kilometres away. This perception is entirely different from the modern conception of loyalty that too often originates from the modern Western vision of the nation and other social groups.

Conclusion

The evidence for Jewish military service in Egypt during the 26th and 28th dynasties, and possibly the 25th dynasty, as well as service in the Persian periods, including their two periods of rule over Egypt (27th and 31st dynasties), supports and corroborates each other. This evidence also suggests that Jews served continuously in those armies from the seventh to the fourth centuries BC, possibly even in considerable numbers, as garrisons and field troops, as rank and file, and as officers. Moreover, the above testimonies highlight that the new rulers in Egypt brought more Jews to the country and increased the number of Jewish garrisons and units, so they could serve as the loyal anchor the ruler could rely upon. Accordingly, their importance and influence grew steadily with every new foreign magnate, up to and including the late Hellenistic rulers.

Haggai Olshanetsky is a lecturer in the new postgraduate international program in ancient Mediterranean civilizations at the University of Warsaw, and a researcher in the project 'The Dawn of Monotheism? Judean religion(s) in Persian and Early Hellenistic Period (5th-3rd cent. BCE) in the light of iconographic, epigraphical and Biblical sources'.

A well-preserved section of the Antonine Wall ditch at Rough Castle Fort, close to Mumrills fort. As the Wall was turf-built, not much remains.

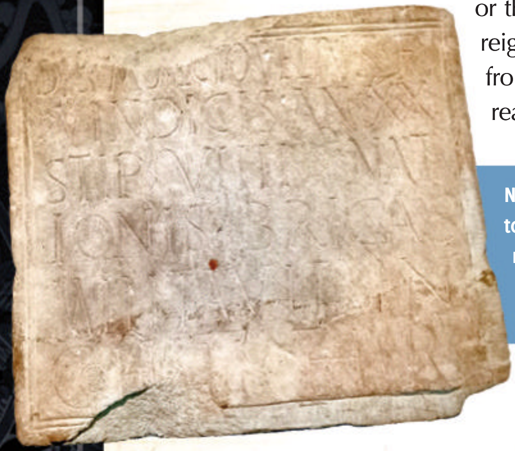
THE TOMBSTONE OF NECTOVELIUS

By Jo Ball

DYING ON THE EDGE OF THE EMPIRE

As the frontiers of Rome began to settle in the second century AD, localized recruitment of soldiers became more common in the Roman army, with recruits increasingly being able to remain in their province of origin during part — or all — of their service. One such example was Nectovelius, a soldier stationed on the Antonine Wall who originally came from northern England.

The tombstone of Nectovelius was discovered in 1834 near the fort of Mumrills on the Antonine Wall. For that reason, it has been dated to AD 140–164, when the frontier was occupied. Some have argued for a slightly earlier date based on some unusual elements in the inscription, most notably *DIS M* for *Dis Manibus* ('to the spirits of the departed') rather than the more conventional abbreviation form *D M*. *DIS M* is known on only four other inscriptions from Britain, two or three of which are older than Hadrian's reign. If the tombstone does pre-date the frontier's construction, there is no clear reason why it is on the Antonine Wall.



Nectovelius' plain and relatively undecorated tombstone is nonetheless an important testimonial for the presence of locally-recruited auxiliaries on Rome's northernmost border.
© Joanne Ball

The life of Nectovelius

The inscription reveals some key details about the life of Nectovelius. He died aged 29 after nine years of service, and he served in the auxiliary Second Cohort of Thracians, suggesting that he was not a citizen prior to his enlistment. Despite the name of his unit, he had no obvious connection to Thrace – instead, as the inscription notes, he was a member of the Brigantes by birth, a tribe based around modern Yorkshire.

The tombstone itself is fairly simple and small. It stands just 35 cm tall and 48 cm wide, with few decorative elements, presenting a modest memorial for a soldier who was more than a third into his military career. No rank is mentioned in the inscription, suggesting that

© Rosser1954 / Wikimedia Commons

Nectovelius was a common soldier; this may explain why the tombstone is not as lavish as many others. It does not mention who dedicated it on his behalf, perhaps indicating that the tombstone was paid for by a military burial club. The only family member mentioned is his father, Vindex. No cause of death is given, as was standard for most Roman tombstones (both military and civilian). He may have died as the result of an injury sustained in battle, but more likely from an accident, infection, or disease.

Thracians in Britain

The Second Cohort of Thracians was a part-mounted unit, originally recruited from the province of Thrace. It is not clear when the unit arrived in Britain, but it evidently served on the Antonine Wall in the second century, before ending up at Moresby on the Cumbrian coast, where its presence is attested by several inscriptions.

Decorated first century AD Roman helmet cheekpiece naming its Thracian owner - Tarsonis.
© Livius.org

The presence of a Briton in an ostensibly Thracian unit demonstrates the growing flexibility in the demographic composition of auxiliary units by the middle of the second century. Nectovelius may have followed a Thracian father into his unit of service, as suggested by both his and his father's Latinized names. However, there is no strong indication that this was the case, particularly in light of his self-stated identity as part of the Brigantes; it is, of course, possible that this descent could have come from his maternal line. Nectovelius' service in a Thracian cohort most likely reflects localized recruitment, perhaps at a time of military crisis, with the ethnic titles of Roman auxiliary units increasingly reflecting their origins, not their present composition. Although the historical sources are vague on details, there are clear indications from incidental references to 'war' in Britain that there was conflict in the region, an impression backed up by the creation of Hadrian's Wall and the Antonine Wall.

A Briton on the Antonine Wall

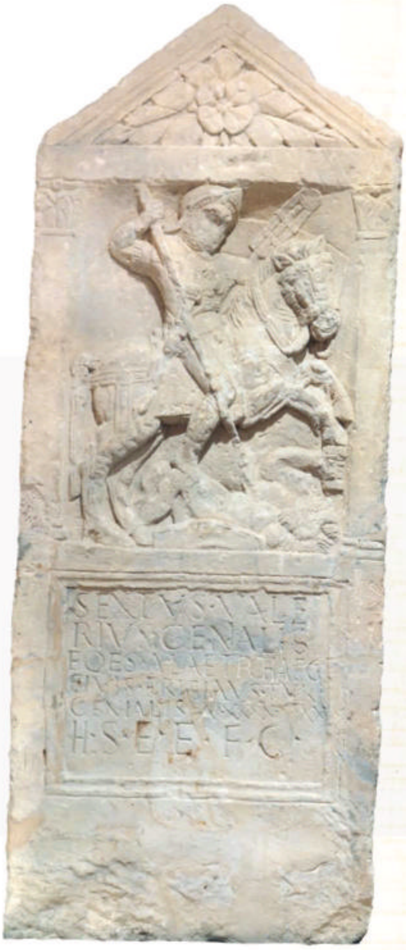
Nectovelius probably served less than 200 miles from where he was raised. In the first century, it had been common practice for recruits to be transferred out of their homeland for service – particularly those from volatile areas such as Britain. In multiple rebellions in the first century AD, both serving and discharged auxiliaries had taken up arms. Rome had learned the dangers of leaving provincial recruits where they might be tempted into trouble.

However, by the mid-second century, such disloyalty seems to have been less of a concern, with provinces like Britain having been under Roman control for many decades. That Nectovelius was able to serve in Britain demonstrates that the Roman military authorities no longer saw the need to ensure that potentially disloyal Britons serve away from familiar surroundings where they might be tempted into rebellion. By the mid-second century, the dangers to Rome in Britain came from further north than the Brigantes – and as Nectovelius demonstrates, Britons were among those on the front line protecting the province behind. AW

Dr. Jo Ball is a regular contributor to* Ancient Warfare *magazine.

Bronze helmet of a Thracian auxiliary from the first century AD. Found in a cremation burial in the tumulus of Kara Agach, now Bryastovets, Bulgaria.
© Dan Diffendale / Flickr

First century AD tombstone of cavalryman Sextus Valerius Genialis of the *Ala I Thracum* trampling a fallen enemy from Corinium Dobunnorum (Cirencester).
© Carole Raddato / Flickr

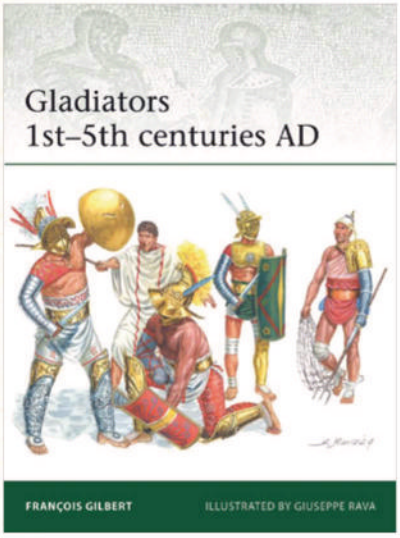


Thracians serving Rome

Even before the province of Thrace was created in 46 BC, Thracians had been serving in Roman armies. Thereafter, their numbers only increased as both auxiliary cavalry *alae* and infantry *cohortes*. Most named units were created in the first century AD, such as the *ala I Thracum* or *cohors I Thracum* - we know of at least five *alae* and eleven *cohortes* from Thrace from surviving inscriptions and diplomas. Some units took on additional titles (such as *ala I Augusta Thracum* or *ala I Thracum Victrix*) to differentiate them from one another although these may on occasion refer to the same unit at different stages of its career. Some of these units remained in service for centuries all over the empire as is suggested by inscriptions and the *Notitia Dignitatum*.

Interestingly, the Thracian tribe of the Bessi is also named remarkably often as the origin of personnell serving in the Italic fleets based at Misenum and Ravenna.

Inscribed dolabra head from Bar Hill fort on the Antonine Wall, ca. AD 142-180.
© Dan Diffendale / Flickr



Gladiators 1st-5th centuries AD
By François Gilbert
ISBN: 978-1472862761
Osprey (2024) - £14.99

www.ospreypublishing.com

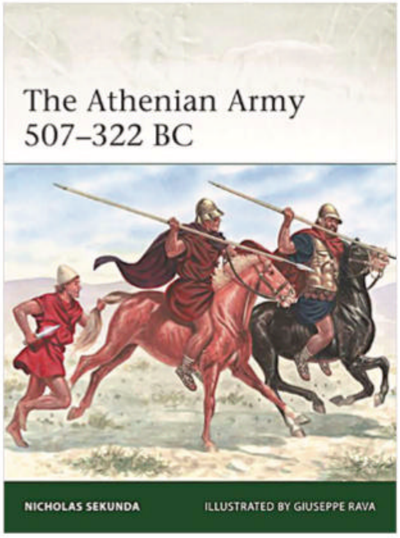
In this volume of Osprey's Elite series, Gilbert explores gladiators from their 'heyday' through to their decline – the first to fifth centuries AD. This is a follow up to his own volume (Elite 246, 2022) exploring gladiators from the fourth to the first centuries BC. The gladiators of the period under examination here are those that people most picture when you use the term gladiator – the *retiarius, secutor, thraex, murmillo*, and others – and Gilbert explores each type in turn.

Perhaps due to popular misrepresentations of gladiatorial combat on screen, gladiatorial combat is largely misunderstood. Gilbert is a great start to disabuse those misunderstandings. Firstly, gladiatorial combat (*munera*, sing. *munus*) was not a free-for-all where any combination of fighter(s), armed with any combination of weapons and armour, could fight any other. Gilbert identifies a total of fifteen different specialities under the principate (p. 10) who were each armed and fought in a particular way and who each had a specific type of opponent. He explores the history of each type, making excellent use of the source material – from written sources through to inscriptions and other depictions. Part of the appeal of gladiatorial combat was in these pairings, and in the challenge of who would win when the strengths and weaknesses of each type and each individual were known. Some of these types — like the *retiarius* and *secutor*, the longest-surviving types of gladiator (p. 24) — remained popular throughout the imperial history of gladiatorial fights; others, like the *sagittarius, hoplomachus*, or *scissor*, were much rarer, and their popularity could wax and wane. Unlike popular representations, these combats were strictly regulated – they were a balance of speed and power, offense and defence, all to guarantee a 'good fight' (not to mention a fair fight – but such things apparently make for poor films where cheating almost always 'must' be committed by the villain). With each combat there was also at least one referee to ensure the fight was fair and to decide the outcome.

Secondly, it was not always guaranteed that one gladiator in each fight would die; we have inscriptions of gladiators who survived several lost fights. One such example is Flamma, a Syrian *secutor* who fought during the reign of Hadrian, whose funerary inscription (*CIL* 2.6278) records that he "fought 34 times, won 21 times, fought to a draw nine times, won reprieve four times". The number of fights Flamma fought and survived is surprisingly high – other gladiators' inscriptions recorded far fewer, even in the single digits, such as five (*ILS* 5107) or seven (*ILS* 5121). Gladiators could acknowledge that they were defeated with a raised finger (*ad digitum*), which would then send a decision on the outcome of the fight to the *editor* of the games who acted as the final arbiter. These men would often appeal to the audience to help in their decision. This is where the most controversial bit of gladiatorial common knowledge comes from — *pollice verso* ("with a turned thumb") — we remain uncertain whether a downturned thumb meant life or death (and vice versa for an upturned thumb). Martial records an unusually intense and balanced combat between two gladiators, Pricsus and Verus, during Titus' reign, who both acknowledged their defeat in the same moment, and were both awarded a crown as the victor (*On Spectacles* 31). Some *munera* were announced as *sine missione*, meaning "without reprieve". *Missio* was the act of sparing a defeated opponent – a gesture depicted on several reliefs. *Sine missione* matches were banned under Augustus but were later brought back – something to appeal to the bloodthirsty crowds.

The book is filled with illustrations by Giuseppe Rava and photos of artistic depictions of gladiators on oil lamps, reliefs, graffiti, sculptures, frescoes, and mosaics, as well as surviving parts of gladiator armour and weaponry, giving us a rich visual representation of gladiator types and gladiators in combat. These images and illustrations concentrate on the arms, armour, and clothing of the different gladiatorial types. All of the variants of equipment, clothing, arms and armour as well as the gestures of all the different types of gladiators are shown in Rava's plates. One might hope that a future filmmaker would have such a volume in hand when they choose to make a film about gladiators – a historically-informed version would be no less exciting and could tell just as exciting a story as what we have seen on our screens but would have the benefit of being properly informed and as accurate as we are able to be.

– Murray Dahm



The Athenian Army 507-322 BC

By Nicholas Sekunda
ISBN: 978-472862808
Osprey (2025) - £14.99

www.ospreypublishing.com

With authors of established repute like Sekunda at the helm, who has written extensively for both Osprey, *Ancient Warfare* and others, ancient-themed Osprey Elite titles (and their readers) are in the safest of hands. Here, Sekunda examines the Athenian army from the time of the democratic revolution in 507 BC, when the Spartan-installed oligarchy led by Isagoras was ousted by Cleisthenes. He instituted the final round of constitutional reforms which created what we recognize as democratic Athens. This is a perfect starting point to examine the (democratic) Athenian army. The bookend of 322 BC, when the Athenian democracy was defeated by Antipater in the Lamian War, also marked the end of the Athenian state as she had been in her democratic heyday. This is obviously a long period, and other titles have previously only looked at specific sections, such as the Persian Wars or the Peloponnesian War. To explore the entire period 507–322 BC, however, gives an overarching approach with themes and features which might be missed in a work which only looks at part of this picture. At the same time, however, Sekunda must be necessarily brief, but the bibliography (pp. 62–63) gives you places to go for more depth.

The eight art plates by Giussepe Rava ably illustrate the types of hoplite who served in the Persian Wars, the *epheboi* in training, fifth century cavalry, later fifth-century hoplites, naval personnel, cavalry javelin practice (from Xenophon's *Cavalry Commander*), and late fourth-century troops. The most interesting (to me) is Plate G — depicting the battle of Tamynae in 390 BC where Athenian cavalry are accompanied by *hamippoi* — light infantry who ran with the cavalry (see *AW* XI.5).

Sekunda wisely limits himself to discussing the land army and concentrates on primary sources (while admitting that the secondary literature is vast). He starts by looking at the reforms of Cleisthenes, giving the essentials of these reforms and even pointing to some alternative readings. The Persian Wars takes up seven pages (pp. 6–13) and looks briefly at the history but also the formation of an archer corps by 480.

Sekunda also looks at the Athenian *lochos* – one of the great unknowns of Athenian army organization (see *AW* XVI.5). Each tribe of Athens was represented in the phalanx by a *taxis* (pl. *taxeis*). Each *taxis* was then made up of several *lochoi*, each commanded by a *lochagos*, the smallest sub-unit in Athenian armies (other than the tent-group *synesitoymen* – but this was not a division used on the battlefield). We do not know the size of the *lochos* nor how many were in each *taxis*; Sekunda here argues for a *lochos* size of 200–300 men. As the smallest division of the Athenian army, this is surely too large and unwieldly. Greater discussion, however, would be impossible in a book of this size and focus.

Sekunda next looks at the *deme* — men from the same *deme* would fight together, so the *lochoi* may have been *deme*-based. When seventeen-year-olds were about to turn eighteen, they registered in the list of citizens for their *deme*. They would then make the ephebic oath at the Temple of Aglauros that they would not disgrace their arms, would not desert their comrades and would obey their commanders. Although the best evidence for this comes from later in the fourth century BC, it is clear that the oath and ephebic training existed (in much the same form) in the fifth century. Probably after taking the oath, young men were given a cloak. He was then liable for training and military service on guard duty within Attica. He would remain eligible for military service (outside Attica) until he reached the age of 60.

Sekunda then moves on to look at Athenian cavalry. Initially probably supplied by wealthy individuals, they may have been organized into a body of 100 men. By 457, this was increased to 300 (perhaps by Cimon), and perhaps at the same time as the hiring of 300 Scythian archers at Athens. Under Pericles, however, the cavalry had increased to 1000. A unit of 200 horse-archers was also raised. There are weighty tomes dedicated to the cavalry – but Sekunda gives us the (well-informed and notated) basics.

Sekunda next looks at the Peloponnesian War (pp. 28–41), including a section on peltasts (pp 36–37). Two sections then close out the work – discussing the army in 404–362 BC (pp. 42–50) and 362–338 BC (pp. 51–61).

Despite its necessary brevity, even well-informed readers will find new insights in Sekunda's latest.

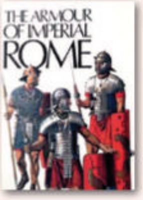
– Murray Dahm

ANCIENT WARFARE *readings*

HELMETS IN ANTIQUITY

Decoration, protection, and a mark of social status: Helmets had many roles in the ancient world. Here are some more books and articles on that topic to check out.

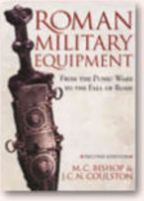
THE ARMOUR OF IMPERIAL ROME



By Henry Russell Robinson
Arms and Armour Press, 1975
ISBN: 978-0684139562

Robinson's *magnum opus* remains the 'bible' for Roman armour despite many advances in discovery and scholarship having been made since. The purpose of this book was to provide in one volume a comprehensive study of Roman armour and it more than achieved that, creating a lasting legacy on the study of Roman armour including helmets, and only recently have Robinson's helmet typlogies been superseded.

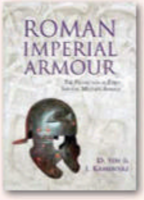
ROMAN MILITARY EQUIPMENT FROM THE PUNIC WARS TO THE FALL OF ROME



By Mike C. Bishop and Jon C.N. Coulston
Second edition Oxbow Books, 2006
ISBN: 978-1842171592

Gathering evidence from all over the Roman Empire, excavations, documentary and pictorial, the authors present a picture of the range of equipment available to a Roman soldier at any given time, from his helmet to his boots, what it would look like and how it would function. This second edition of this detailed and authoritative handbook has been completely revised.

ROMAN IMPERIAL ARMOUR: THE PRODUCTION OF EARLY IMPERIAL MILITARY ARMOUR



By David Sim and J. Kaminski
Oxbow Books, 2012
ISBN: 978-1842177037

Exploring the production of armour during the early imperial period in the first and second centuries AD, the authors examine the metals and how the raw product was made into armour. They go on to consider the organisation, its size, composition, and the logistics involved in its deployment and provisioning and the training, remuneration and benefits offered.

ROMAN GILDED HELMETS OF THE MUSEUM OF VOJVODINA

By Tijana Stanković Pešterac
Museum of Vojvodina Novi Sad, 2019
ISBN: 9788681086384

An exquisitely illustrated account of the discovery of the three Berkasovo-type helmets from the museum where they are on permanent display in Serbia. The photos alone make this worthwhile. In addition to the story of the helmets' discovery, form and (possible) history, the work also includes the Jarak helmet (found in 2006) and its preservation and restoration.

Other articles and publications

- Cosson, Charles, & Burges, W. *Ancient Helmets and Examples of Mail* London: The Royal Archaeological Institute, 1880.
- Dezső, Tamas. *The Assyrian Army / The Structure of the Neo-Assyrian Army as reconstructed from Assyrian Palace Reliefs and Cuneiform Sources*. Budapest: Eötvös University Press, three volumes 2012, 2016, 2022.
- Dezső, Tamas. *The Assyrian Army II: Recruitment and Logistics*. Budapest: Eötvös University Press, 2016.
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- Glad, Damien. *L'armement dans la Région Balkanique à l'époque Romaine Tardive et Protobyzantine (284-641): Héritage, Adaptation et Innovation*. Turnhout: Brepols, 2015.
- Miks, Christian. *Ein spätrömischer Depotfund aus Koblenz am Rhein: Studien zu Kammhelmen der späten Kaiserzeit*. Mainz: RGZM, 2014.
- Place, Victor. *Ninive et l'Assyrie*. 3 volumes. Paris: Imprimerie impériale, 1867-1870.
- Robinson, H.R., & Embleton, R. *What the Soldiers Wore on Hadrian's Wall*. Newcastle upon Tyne: Frank Graham, 1978.
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- Sim, D., & Kaminski, J. 'The production and deposition of the Witcham Gravel Helmet' *Proceedings of the Cambridge Antiquarian Society* 103 (2014): 69–82.
- Sumner, Graham, & D'Amato, Raffaele. *Arms And Armour of the Imperial Roman Soldier: From Marius to Commodus*. London: Frontline Books, 2009.
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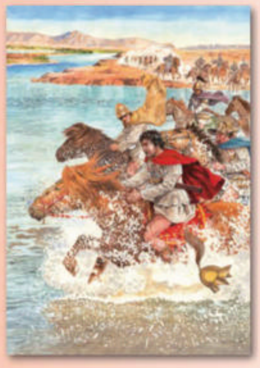
ON THE COVER: Keep a lid on it



Obviously, archaeological finds of helmets are among the most important sources for the variety of helmets worn in the ancient world. There are typologies and 'family trees' of development into which many helmets fit. And yet, many are also designated by their findspot or the culture they are rightly, or wronlgy, associated with. Think of the Boeotian, Illyrian, and Chalcidian. Most cultures issued their fighters with helmets (and shields and spears) marking the helmet out as one of the important signifiers of the fighting man, and we recognize them as such in iconography even if the rest of his equipment is missing.

Some of the most spectacular archaeological finds have been of helmets – from this issue's centrefold (at Kalkriese) to that on the cover. Here we see a cavalryman in the army of Alexander the Great wearing a typical Boeotian helmet – one favoured by his cavalrymen – or rather losing it as he races across the river. The helmet was found in the River Tigris and can only have belonged to a single set of circumstances – when Alexander the Great's army crossed the river in 331 BC before advancing towards the battle of Gaugamela fought in early October in the final defeat of the forces of the Persian king Darius III.

BOOKS AND MAGAZINES FROM KARWANSARAY PUBLISHERS

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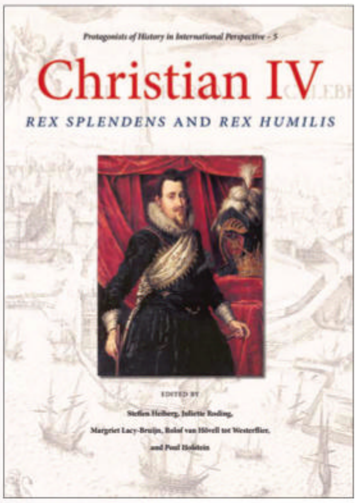
Protagonists of History in International Perspective – 5
Christian IV
REX SPLENDENS AND REX HUMILIS

CHRISTIAN IV: REX SPLENDENS AND REX HUMILIS

Edited by Steffen Heiberg, Juliette Roding, Margriet Lacy-Bruijn et al.
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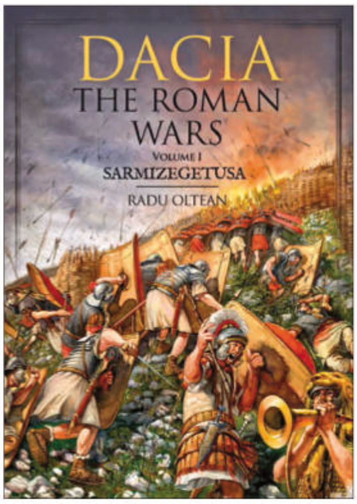
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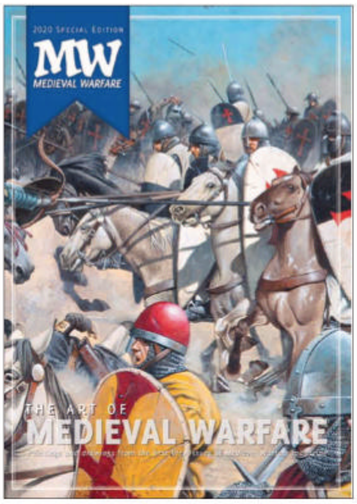
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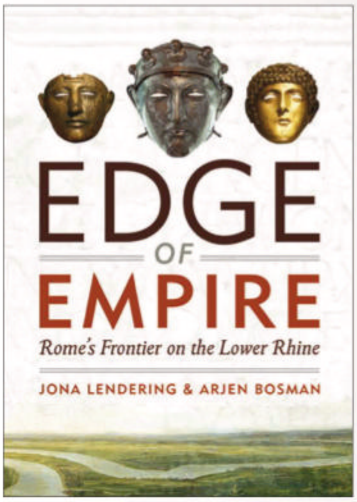
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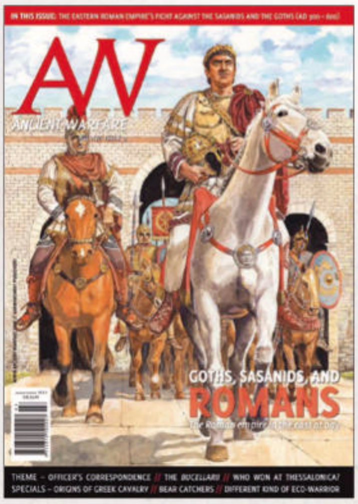
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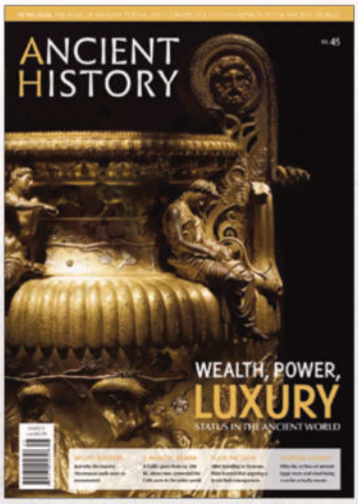
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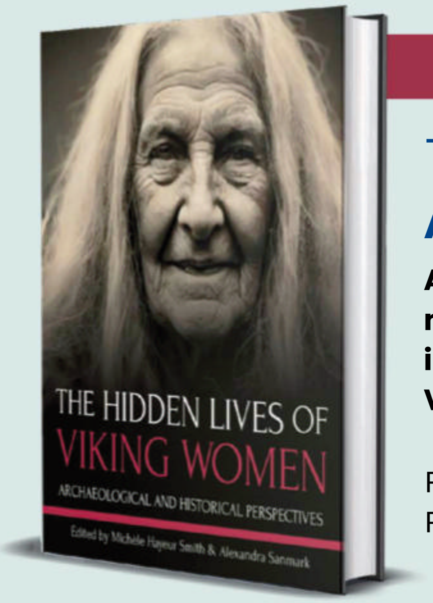
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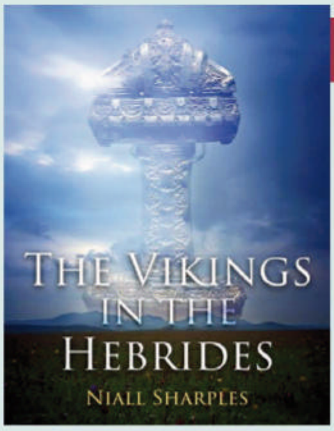
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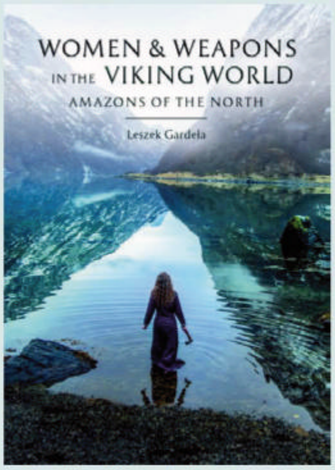
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